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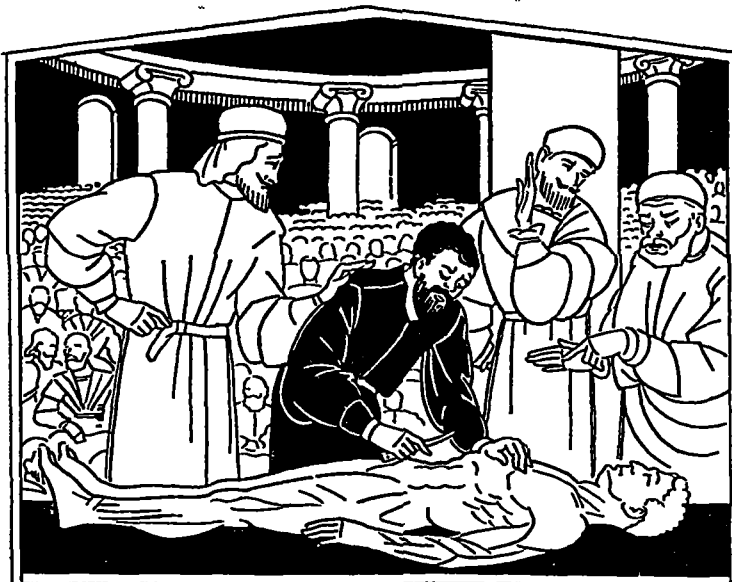
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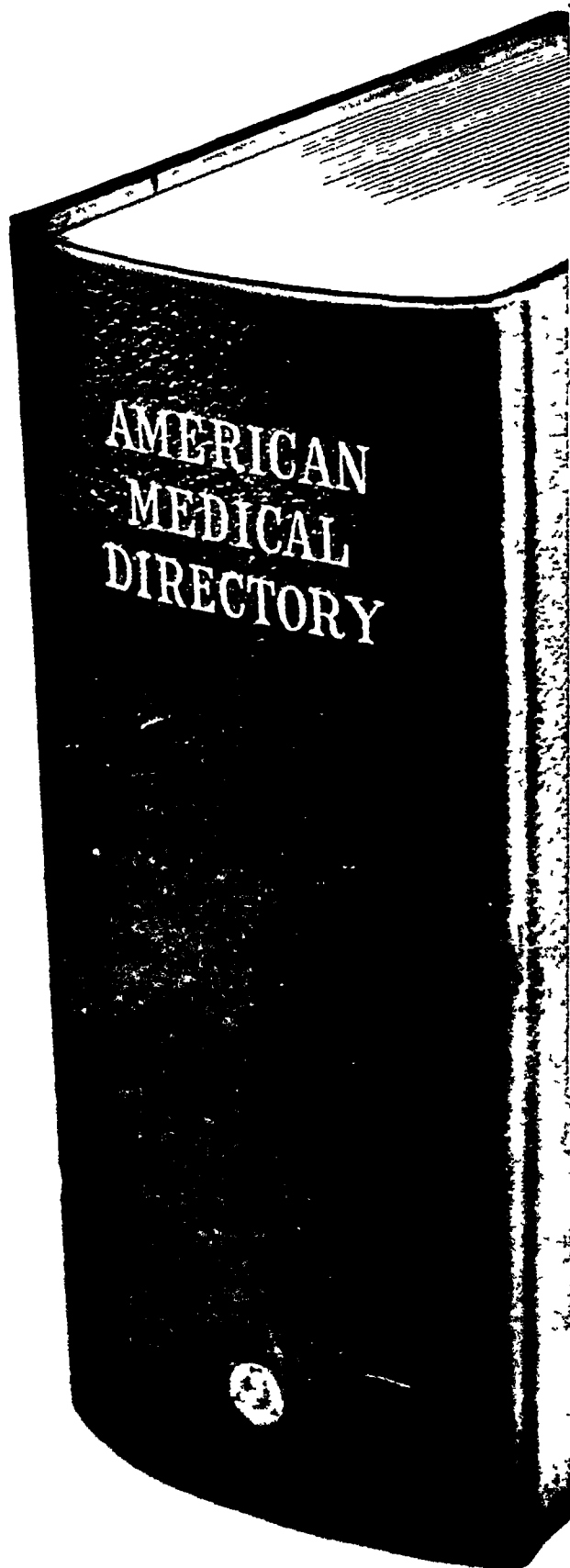


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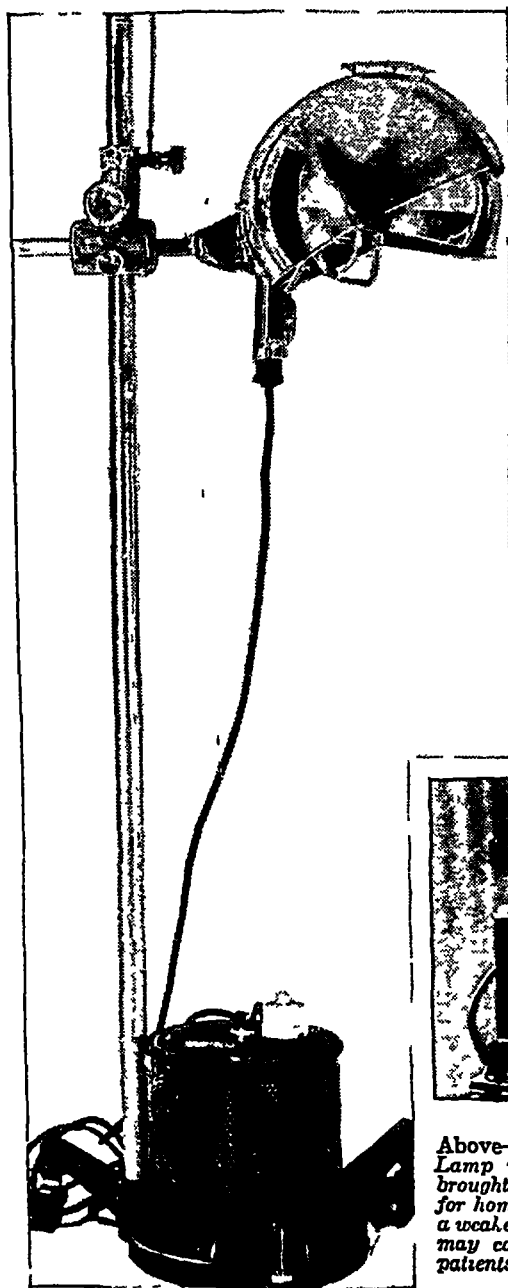
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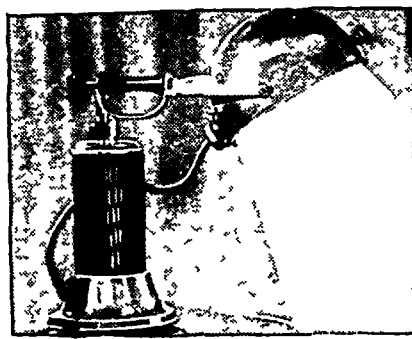
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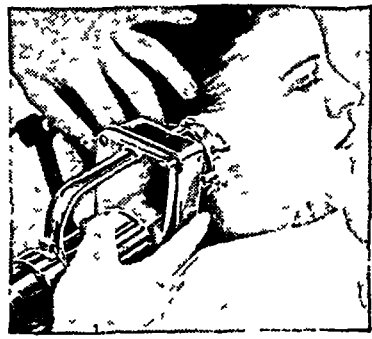
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Archives of Dermatology and Syphilology

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NUMBER 1

PRIMARY ACTINOMYCOSIS OF THE SKIN *

FRANCESCO RONCHESE, M D

Fellow of the Italian Society of Dermatology and Syphilology

TREVISI, ITALY

Primary actinomycosis of the skin independent of involvement of the viscera and bones is a rare disease. Truffi¹ said that "exceptionally the process can be limited to the skin without involving the contiguous tissues" and that "some authors deny the existence of an Actinomycosis strictly cutaneous."

The observations reported in the literature are few. For that reason, I think the following report of actinomycosis limited closely to the skin, lasting for several years, without affecting the adjoining tissues or spreading to the other parts of the body, is interesting. Is it because of an increased resistance of the skin to the growth of the fungus that it differs from the other organs or tissues?

Bolognesi and Chiurco,² in an extensive and remarkable treatise on surgical mycoses covering a great deal of the literature on the subject, devoted a considerable part to actinomycosis in general, and in the chapter regarding actinomycosis of the skin reported numerous statistics. The most recent report was that of Girardi (1910), who grouped thirty cases. After that time and until 1925, Bolognesi and Chiurco quoted the observations of eight other investigators (Vignolo-Lutati, Holland, Burkhard, Hubschmann, Baskin, Crescenzi, Mantegazza, Truffi). Sanford and Voelker³ (1925), studying the distribution of actinomycosis in the United States, grouped a total of 670 cases observed in this country. Among them they found only three cases of the subcutaneous or cutaneous type. Rauber⁴ (1925) reported twenty more cases of the cutaneous type and described one on the glans penis. De La Guardia⁵ (1927) published a case of facial actinomycosis with no bony involvement, in which the patient was completely cured by excision,

* Submitted for publication, Jan 3, 1929

1 Truffi, M. Actinomycosis of Skin, *Riforma med* 41 337, 1925

2 Bolognesi and Chiurco. *Le micosi chirurgiche*, Siena Libreria Editrice Senese, 1927

3 Sanford, A. H. and Voelker, M. Actinomycosis in the United States, *Arch Surg* 11:809 (Dec) 1925

4 Rauber. Zur Kenntnis der primären Aktinomykose der Haut, *Acta dermat venereol* 5 493 1925

5 De La Guardia, J. A Case of Facial Actinomycosis, Report of Med Dept. United Fruit Co. 1927 quoted in *Urol & Cutan Rev* 32:617 (Sept) 1928

curettage and intravenous injections of iodine. Every part of the body has been attacked, particularly the face and neck, the ankle only once (Crescenzi).

REPORT OF A CASE

History—F. A., a boy, aged 15 years, born in Treviso (Italy), a student, had always enjoyed the best of health except for the present illness. His grand parents, parents and eight brothers were living and in good health. The skin condition began ten years previously. At the time of onset, during the World War, he lived in the country and was always barefoot. His parents and the



FIG. 1.—The lesion of the dorsal region of the left ankle.

received sun treatment for the past four summers. All this treatment has been without effect.

Examination (Feb 27, 1927)—The general nutrition was good. The bones and joints were normal. The palate was somewhat arched, and the teeth were poor and irregular, with small, separated incisors. The results of internal examination and roentgen examination were negative, as was also the tuberculin reaction.

An irregular area, from 3 to 5 cm wide and 11 cm long, was noted over the dorsal region of the left ankle, which extended as a band into the internal malleolus and was irregularly raised at the normal margins of the skin. The lower edge was raised about 1 cm by purplish-red, nodular masses. These nodules were perforated by numerous holes from which serum or pus, mixed with a sebaceous and bloody fluid, escaped either spontaneously or by pressure.



Fig 2—The lesion on the internal malleolus of the left ankle

The lesion was in part covered by dirty, yellowish, oily crusts, which were easily raised, but were removed with difficulty. After the removal of the crusts, the underlying nodules appeared soft and flabby, with the fluid withdrawn.

The crusts, especially on the edges, were like the scales of psoriasis and were removed easily. At some points, as on the malleolar region, they were thick like *ecthyma vulgaris*. A scar, from 2 to 3 cm wide, was noted on the superior edge and on the sides, which was soft, dark red and somewhat infiltrated, with irregular edges gradually passing into normal skin. The lesion moved over the bones but was somewhat resistant to removal in toto. The contiguous skin was normal. The adjoining lymph and other glands were normal. There was no pain except a slight pain on pressure. The lesions did not hinder walking in any way.

Laboratory Observations—The blood count showed red blood cells, 4,770,000, white blood cells, 5,000, hemoglobin, 97, the differential count showed polymorphonuclears, 60 per cent eosinophils, 0, basophils, 2 per cent, small and medium lymphocytes, 14 per cent, large lymphocytes, 16 per cent, monocytes, 5 per cent, myelocytes and neutrophils, 4 per cent. No abnormal cells were found. The red blood cells were normal. The Wassermann reaction and the results of urinalysis were negative.

Material was taken from the nodules, which was not perforated, however, much of it was probably connected. I planted plates of Sabouraud's agar, pure agar and gelatin agar several times. Each culture remained sterile, except one in which colonies of common cocci grew.

With the same material, I inoculated a guinea-pig under the skin of the thigh, without any result. After twenty days I inoculated new material, taken from the patient, into the other thigh of the guinea-pig. Eight days later, at the point of the second inoculation a nodule about the size of a marble had formed. After eighteen days, the nodule became as large as a walnut and was evidently fluctuating. The contents were extracted with a syringe, and a microscopical examination showed pus, diplobacilli, bacilli and filamentous forms of the

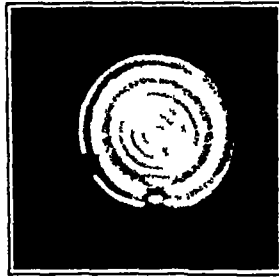


FIG. 3.—Culture of *Actinomyces bovis* on pure agar 1 month old.

leptothrix type all gram-negative, no staphylococci, streptococci or 'sulphur' granules (Dr. Olvi). When the same matter was diluted and planted in Sabouraud's agar and pure agar the following results obtained. In Sabouraud's agar velvety raised green-gray disks grew, which resembled common moss. In pure agar grew some shining dots or white and red colonies of cocci, others appeared as disciform velvety plates as white as snow, with well defined concentric turns separated by valleys and a few spreading white filaments. After one month the white colonies became large as shown in figure 3. Successive cultures in the same medium gave the same results.

The guinea-pig after recovering from the abscess was killed and showed no lesions. A culture (fig. 3) was sent for identification to Professor Pollacci of Pavia University, and he reported that the fungus was *Actinomyces bovis* (March 22 1928).

Treatment and Course—While waiting for the mycologist's report, I gave the patient strong doses of potassium iodide for three months, without results. Because of the negative microscopic observations on the pus and the lack of growth in the Sabouraud's medium, I treated the patient for pyogenic vegetans dermatitis according to Besredka's method and obtained a marked improvement. The successful results of this method, evidently due to the pyogenesis of the disease, lasted about a month, then the abscesses recurred, and the condition was reproduced.

After the mycologist made the diagnosis of actinomycosis, because of the negative results of previous methods, the site of the lesion, its limitation to the skin and its mobility, which agreed with that of the surgeon (Professor Carisi) who performed the operation, the entire area of affected skin was excised and a pedicle graft was made from skin taken near the lesion. The open region was



Fig 4—Section showing infiltration and abscesses as a picture of chronic vegetant pyodermitis

covered partly by Thiersch's grafts taken from the thigh. Healing took place by secondary intention in about one month.

Microscopic Examination—Parts of the area of the skin surgically excised and fixed in alcohol and formaldehyde were cut, and sections were stained with hematoxylin eosin, Unna-Pappenheim and Gram stains. The picture was that of a common chronic vegetans pyodermitis or granuloma pyogenicum. In some parts the stratum corneum was extremely thin and disappeared, in other parts there was a marked hyperkeratosis. Among the elements of the corpus mucosum were numerous leukocytes.

In some parts the epidermis had long and wide projections which reached into the corium, delimited large islands of dermic connective tissue and inserted into acanthotic dermic papillae.

The corium was invaded by a thick infiltration of leukocytes and lymphocytes, and in some parts the infiltration produced large intradermic abscesses. Large

round areas were occupied by degenerated red cells. There were fairly numerous plasma cells. In the deep layer of the corium were noted numerous foci of the fungus (filaments among amorphous material). No typical club figures in ray formation were noted.

EXPERIMENTAL WORK

I inoculated a suspension of triturated pieces of excised skin in physiologic solution under the skin of the backs of six rabbits. This produced abscesses containing pus and common germs, which opened spontaneously and healed without subsequent lesions. In two rabbits, three months later, some soft, mobile nodules remained. When scarification was done on the animals and the skin was incised, the nodules appeared dome-shaped, regularly round, from 2 to 4 cm wide, of soft connective tissue, enclosing small, yellow balls, round or oval, with the appearance of "sulphur" granules or cancrroid "vermiotes," and on the whole resembling a jewel in a ring. No inflammatory reaction was found. The nodes were discreet and mobile in the soft cellular subcutaneous tissue with the consistency of a small flabby sac.

Microscopically, I saw only soft connective septums which limited areas filled with cellular detritus and amorphous material. No vestiges of fungi were found.

COMMENT

The chronic condition, the absence of pain, the granulomatous appearance and the slightly indurated infiltration might have simulated tuberculosis. The diagnosis of tertiary syphilis could be easily excluded, for in that length of time syphilis would have produced a gumma which in a short while would have changed into a large characteristic ulcer and would not have allowed the disease to last as long as it did and remain of a verrucous type with profuse suppuration. Vegetant pyodermitis, in such a young person in good general health, with adequate treatment, should heal in a much shorter time.

One could also have in mind sporotrichosis of a vegetant verrucous type but the isolated, gummatous nodules, scattered along the course of the lymphatics, as well as lymphangitis and lymphadenitis were lacking.

As for actinomycosis, the typical "sulphur" granules in the pus and the woody infiltration of the tissues were lacking, which would rather militate in favor of a diagnosis of tuberculosis or syphilis. In favor of the diagnosis of actinomycosis was the granulomatous appearance, the sluggishness of the lesion and even the absence of adenopathy, which may also occur, although seldom, in actinomycosis due to the ray fungus or to the associated germs.

In actinomycosis and sporotrichosis, a negative result was obtained with iodine treatment. There were only the common germs in the pus and no particular growth in Sabouraud's medium.

In fistulous cases, therefore, there may be a lack of the characteristic "sulphur" granules, cultures may be negative even in repeated experiments, and diagnosis may be impossible (Bolognesi and Churco²) Brickner⁶ was of the same opinion concerning the discharge from the pelvic and intestinal actinomycosis, for he declared that the sulphur bodies are "a diagnostic fetish" Such were the observations in my case The pus taken from fistulous tracts or from nodules, apparently closed but not absolutely isolated as they had communications with open ones, did not show "sulphur" granules and did not give the fungus growth in Sabouraud's medium The diagnosis seemed impossible, but persistence led to the obtaining of the growth of ray fungus from material from abscesses in guinea-pigs obtained by inoculation of pus taken from the patient and planted in pure agar

The case can be classified as one of Majocchi's second type (Bolognesi and Churco²) chronic ulcerogummatous lesions at grouped foci, suppurating, opening spontaneously and yielding small drops of pus, lack of adenopathy, either close or remote, strict limitation to the skin, without any involvement of the bones, chronic course, and absence of pain and fever The condition lacked only the typical woody infiltration and "sulphur" granules in the pus

The serodiagnosis which, like every biologic research for mycoses, has only a relative value (Bolognesi and Churco²), was negative for actinomycosis and weakly positive for sporotrichosis In this case, it is sufficient to show its value, which would have allowed a diagnostic direction toward mycosis even before resort was made to cultural data

It is known that the biologic reactions for mycoses are group reactions rather than specific reactions for each fungus (Radaeli⁷) Therefore, while the negative reaction for actinomycosis was without value for the dilution of antigen forcibly used, even the weak positive reaction for sporotrichosis was, in that case, of great importance for a diagnosis of mycosis

MacKee⁸ stated that treatment with the roentgen rays or radium is superior to any other method Feit⁹ also advised the roentgenotherapy as the best treatment However, he referred to two patients with lesions situated on the face, originating in the teeth, on whom surgical excision would have had an uncertain result, and operation limited to curettage would have favored the spread of the infection In these two

6 Brickner, W. M. Pelvic Actinomycosis, *Ann Surg* **81** 343 (Jan) 1925

7 Radaeli Diagnostica delle malattie cutanee, Milan Vallardi, 1920

8 MacKee X-Rays and Radium in the Treatment of Diseases of the Skin, Philadelphia, Lea & Febiger 1927

9 Feit H. Actinomycosis Cutaneous and Systemic *Arch Dermat & Syph* **17**:791 (June) 1928

cases, however, he obtained only the disappearance of the swelling and stiffness in one, he gave no report concerning the other

Snoke¹⁰ reported a case of actinomycosis of the tongue cured with roentgen treatment New and Figi,¹¹ in a study on 107 cases of the head and neck, were in favor of treatment with radium

In the case presented, all the various treatments previously used, iodine and roentgen rays included, failed completely, and because of the favorable site without involvement of contiguous tissues, I chose to remove surgically the affected area of skin in toto

Of course, the experience of only one observation cannot prove the value of treatment with the roentgen rays or radium, as stated by the authors mentioned, however, when it is possible, as in processes on the cutaneous surface not involving the bones or internal organs, or, for example, in conditions of the abdomen and pelvis (Brand¹²), I think that surgical radical excision will give the best results¹³

Brilliant success (cure in eight days) would seem to have been obtained by Cornioley and Fischer¹⁴ in two cases after an intravenous injection of a radioactive preparation

The microbic association was shown by the microscopic examination of the pus and the good results obtained on one part of the lesion (the pyogenic part) with local treatment according to Besredka's method The improvement, although temporary, demonstrates that a notable part of the disease was due to the pyogenic germs, which were an obstacle in the development of the fungus, and perhaps altered its nature, allowing the lesion to remain absolutely cutaneous, in spite of its long duration The spontaneous cure, complete in one lesion and partial in the principal one, must be attributed to the expulsion of the fungus through the open abscesses favored by pyogenic germs

It is impossible to state the mode and origin of the infection as neither the patient nor his relatives remember the presence of a wound or pricking of any kind

10 Snoke P O A Report of Five Cases, *Am J M Sc* 195 69, 1928

11 New, F B, and Figi, F A Report of 107 Cases of Head and Neck, *Surg Gynec Obst* 37 617 (Nov) 1923

12 Brand, G D Actinomycosis With Report of Two Cases, *U S Vet Bur M Bull* 4 335 (April) 1928

13 Ravaut and Filliol reported the observation—read after this paper was sent for publication—of a case of actinomycosis of the cheek and temporal region which remained unaffected by iodine and roentgen treatment, but was permanently cured by diathermocoagulation of the encysted foci, followed by the oral and intravenous administration of iodine (*Bull Soc franç de dermat et syph*, December, 1928)

14 Cornioley and Fischer Du traitement de l'actinomycose par le radium, *Bull et mem Soc nat de chir* 54 335 (March) 1928

The process was not contagious. The disease lasted ten years, the patient remaining in the midst of his large family. There was always an abundant exudation of serum and pus, which was covered only with thin cotton which was changed as seldom as possible for economic reasons, hence, there was every opportunity for contagion, however, no other member of the family contracted the disease.

The lesion was unusual in its location, for only one other case of actinomycosis occurring on the region of the ankle is reported (Crescenzi¹⁵). The disease began before the patient was 5 years old, which is rare.

I was led to a favorable prognosis because the contiguous tissues were sound in spite of the long duration, and because of the tendency to spontaneous cure.

SUMMARY

I have described a rare case, difficult of diagnosis, of primary actinomycosis of the skin, associated with common pyogenic germs, limited strictly to the skin, without involvement of the tendinous sheaths or bones, located on the dorsal and interior regions of the left ankle, of Majocchi's second type, with the onset ten years before, when the patient was 5 years old and in part spontaneously cured.

In the pus which was discharged from the fistulous tracts, I did not find the "sulphur" granules, and at first the cultures on appropriate mediums were negative. Only from the inoculated guinea-pig did I obtain the material which, planted in pure agar, made it possible to demonstrate the ray fungus.

The serodiagnosis was weakly positive with *Sporotrichum beuermannii* antigen.

The treatment with the roentgen rays and iodine gave no results.

I obtained permanent cure by the total surgical removal of the diseased area of skin.

235 Marcy Street, Southbridge, Mass

¹⁵ Crescenzi, quoted by Bolognesi and Chiurco. *Le micosi chirurgiche*, Siena, Libreria, Editrice Senese, 1927.

ADENOMA OF THE COIL GLANDS

REPORT OF A CASE, WITH HISTOLOGIC CRITERIA *

M H GOODMAN, M D

BALTIMORE

Examples of definitely proved adenomas of the sweat glands are difficult to find in a survey of the literature on this subject. The evidence for the establishment of such a diagnosis in the earlier reports of cases has been chiefly presumptive. Thierfelder¹ referred to the previously reported cases of tumors of the sweat glands, among which he included those of Verneuil and of Lotzbeck, as instances of simple hypertrophy, he himself reported a case of suspicious tumor of the sweat glands occurring on the forehead. On removal, this tumor was found to have invaded the bone to the meninges, it was extremely vascular, ample proof of its malignant nature. The patient died within a few days after the operation. Thierfelder assumed that the tumor arose from "sprouts, which in this case certainly have originated during embryonic life."

Hoggan² reported a case of adenoma of the sweat glands under the title "Concerning the Histo-Pathology of Painful Subcutaneous Tumor," with the statement "The tumor is a typical adenoma of the sweat glands, a pathologic formation until now unknown." In describing the tumor he stated that, microscopically, it looked, at first, like a mass of mucous glands, but that at one end, where the growth was rich, new sweat glands were seen to be enclosed here and there which showed an abnormal development. In this richly growing area there were cellular arrangements in the form of canals which showed a more or less extensive lumen. In the center of the tumor, however, which was apparently older, there were no coils or ducts, but solid, formless cell masses of the same type as the sweat gland epithelium which were not in direct connection with sweat glands. Hoggan believed that these formless cell masses arose from extravasations of the blood which frequently form in tumors, and which, after they are organized "arrive at the point where the cells contained in the extravasation take on an appearance similar to those of the tumor surrounding them." From his

*Submitted for publication, Feb 19, 1929

* From the Department of Pathology, University of Maryland

1 Thierfelder, F A Ein Fall von Schweissdrusen-Adenom, Arch d Heilk 11 401, 1870

2 Hoggan G and Hoggan, Frances E Zur pathologischen Histologie der schmerzhaften subcutanen Geschwulst Arch f path Anat 83 233, 1881

description, one cannot be sure whether the hyperplasia of apparently preexisting sweat glands was primary or whether it was secondary to the development of the formless cell masses which he mentions

Incident to a study of the cause of pain in subcutaneous tumors, Chandleux³ presented two cases of tumors that might well have been adenomas of the sweat gland. Definite proof of this, however, is lacking as the glandlike elements which he described and presented in drawings showed a rather varied type of cell. Section of one of the tumors showed a well circumscribed glandlike structure and ductlike elements, the latter possessing a pavement epithelium, the inner cells of which were of the mucous cell type, and the outer, polyhedral in type. "Winding cavities" were also present which were in many places incompletely lined with cells of cylindric type. He stated that the tumor resulted from an abnormal development of sweat glands. In the drawings no evidence of normal sweat gland structures are seen.

Petersen⁴ reported a case of multiple tumors of the coil glands which appeared clinically as a naevus verrucosus unius lateris. His microscopic specimens showed adenomatous tumors apparently originating in the sweat glands and sweat ducts. The patient was a woman, aged 20 and the tumors, limited to one side of the midline, had been present since birth. As proof of their origin in sweat glands, he found a "histological type of canals which according to cell-form and arrangement, membrana propria, cuticula and lumen are similar throughout to sweat ducts and in several places are in direct connection with them. Also, the frequent occurrence of cylindrical epithelium gives strength to this assumption. Further, there is absent any connection with sebaceous glands, blood or lymph vessels." This author, influenced presumably by the nevoid character of the growths, claimed that it was not apparent that the changes arose from the already completely formed glands, for "there are absent in several places the completed glands, also the described changes in the ducts are not sufficiently emphasized and their direct connection with the tumor elements are too rarely demonstrable to ascribe to them a great rôle in the tumor formation. It is more advisable to view the pathologic process as being associated with the development of the coil glands. According to all appearances the normal developmental process of coil gland (ingrowths of projecting epithelial sprouts into the corium, later formation of a lumen, rolling of the lower end, etc.) experienced a strong disturbance." He explained the tumor, therefore, as a maldevelopmental phenomenon. He pointed

3 Chandleux, A. Recherches histologiques sur les tubercles souscutanes douloureux. Arch. de physiol. 9:639, 1882.

4 Petersen, W. Ein Fall von multiplen Knäueldrüsen-*geschwülsten* unter dem Bilde eines Naevus verrucosus unius lateris. Arch. f. Dermat. u. Syph. 24:919, 1892.

out that Geber⁵ placed Lotzbeck's reported tumor of the sweat glands in the group of the vascular nevi. He further pointed out that the cases of Perry and Cahen⁶ were not well enough presented microscopically to permit the reader to identify them as such. He expressed the belief, however, that the cases of Thierfelder and Hoggan were undoubtedly tumors of the coil glands. Unna, on the other hand, placed Petersen's case definitely in the group of syringo-adenoma.⁷

Perry's⁸ well illustrated case of what he termed adenoma of the sweat glands was obviously not a tumor of the sweat glands at all. Brooke⁹ reported four cases of epithelioma adenoides cysticum. In his article he referred to Perry's illustration as follows, "This excellent chromolithograph so closely represents the appearance presented by my four cases that I thought it unnecessary to have a reproduction of them made in color."

Elliot¹⁰ reported a case which clinically was apparently a naevus unius lateris. The patient was a man, aged 26, and the lesions were located in an area which was constantly subjected to external irritation. Histologically, he found in the lesions a cystic degeneration of sweat coils and their ducts without any new formation of gland tissue. There was "only a proliferation of the cells lining the already existing coils of the glands, followed by death of these cells and a consequently resulting cyst." He called this condition an adenocystoma and not a cysto-adenoma. Here, as the author stated, there was no need for assuming, as in Petersen's case, that the condition was connected with the embryonal development of the coil glands. Elliot attributed the cystic degeneration in this case to some cause (not congenital), probably the irritation by the suspenders which the patient constantly wore, the lesions being present in the right supraclavicular space, just along the outer border of the trapezius muscle.

In my opinion, Unna¹¹ appears to express very simply the prerequisites for the proof that one is dealing with an adenoma of the sweat glands. He stated, "In view of the resemblance of so many

5 Geber, E. Adenoma of the Skin, in Ziemssen, H. V. Handbuch der Hautkrankheiten, New York, William Wood & Company, 1885, p. 615.

6 Cahen, F. Schweissdrusen-Retentioncyste der Brust, Deutsche Ztschr. f. Chr. **31** 370, 1891.

7 Unna, P. G. Histopathology of Diseases of Skin, trans. by Walker, New York, The Macmillan Company, 1896, p. 811.

8 Perry, E. C. Adenomata of the Sweat Glands, International Atlas of Rare Skin Diseases, no. 9, part 3, 1890, p. 1.

9 Brooke, H. G. Epithelioma Adenoides Cysticum, Brit. J. Dermat. **4** 269, 1892.

10 Elliot, G. T. Adeno-Cystoma Intra-Canaliculare Occurring in a Naevus Unius Lateris, J. Cutan. & Genito-Urin. Dis. **116** 168, 1893.

11 Unna (footnote 7, p. 803).

epithelial growths to glands, we must regard the recognition of pre-existing coil glands at the seat of the tumor as the surest proof that we are dealing with an adenoma of the coil glands and not with an accidental glandlike acanthoma." This surely applies in acquired tumors. He further stated ¹² "I thus find the positive factor which distinguishes the hyperplasia of adenoma from simple hyperplasia in a growth, resembling in structure the coil gland, but exceeding it in architecture, and the negative, in the simultaneous destruction of the normal glandular function, as far as can be histologically recognized by the absence of the normal secretion, in this case, fat." Unna himself ¹³ described a case which he labeled adenoma of the sweat gland. From the description given, however, and in the absence of any photomicrograph it is difficult to visualize the essentials of a definitely proved case even by his own criteria.

Brauns ¹⁴ studied a case in which the tissue was taken from the cadaver of the subject. In this case the changes were scattered over the entire trunk, they were especially marked on the breast, abdomen and inguinal regions. The condition dated as far back as the patient could recall, his age at death being 45 years. In the picture accompanying the report one of the tumors is seen to be present at the site in the axilla similar to that in which the tumor described in the present report occurred. The condition presented itself as a series of globular, elevated tumors, varying in size from that of a hempseed to that of a hazelnut, and cysts could be found on section containing a yellow, pulpy mass. Histologically, large and small cysts separated by thin septum-like strands were seen extending from the surface to the subcutaneum. In most instances the cyst wall had two rows of cuboidal cells with well stained vesicular nuclei and finely granular protoplasm. The contents of the cyst were only granular detritus and remains of degenerated cells. In certain areas there was noted a change of the epithelial cell type to that of the sebaceous gland type. This particular observation was also made in the case that constitutes the subject of this report. Brauns pointed out that it is common to find a transitional change from sweat gland epithelium to the type seen in sebaceous glands. In his conclusions he stated logically, in view of the long duration of the tumors in his case, that one must conceive of this condition as an inborn extensive adenoma of the sweat glands with secondary cyst formation. He is perhaps justified in viewing the condition as originating in some embryonic maldevelopmental phenomenon.

¹² Unna (footnote 11, p. 805)

¹³ Unna (footnote 11 p. 811)

¹⁴ Brauns, T. Ein Fall von ausgebreitetem Schweissdrüsen-Adenom mit Cystenbildung. *Arch. f. Dermat. u. Syph.* 64: 347, 1903.

Thimm¹⁵ reported a case of what he called multiple cystadenoma of the sweat gland coils, and in his article referred to Brauns' case with the statement that the special features of the latter's case corresponded very well with his own microscopic observations. In Thimm's patient there were about 150 tumors over the sternal area, many were scattered over the entire anterior surface of the trunk, on the neck, in the anterior axillary fold and, finally, there were a few on the back, in the bends of both elbows and knees. The condition began in the patient, a man, aged 35, at the age of 17 years. There was no history of its occurrence in any other member of the family. No convincing proof of the origin of these tumors from sweat glands can be gathered, for a major clinical observation was the presence of numerous comedones on the face and trunk, microscopically, the large cyst which was present in the tumor sectioned showed an outer layer of connective tissue with an inner layer of cuboidal cells suggestive of prickle cells and an innermost scalelike, enucleated, structureless horny layer. Thimm further added that in one place the glandlike structures showed prickle cells within, in one instance filling up the lumen. In view of such observations, one must question strongly an origin purely in the sweat glands in the case of the tumor herein described.

Because of the apparently great confusion existing in regard to the type of growth in the skin that should be considered as a true adenoma originating in the sweat glands, and, furthermore, because of the doubt which exists in the minds of many as to whether there is, after all, a pure adenoma of the sweat glands, it was felt appropriate to report the following case.

REPORT OF CASE

S. P. S., a white woman, aged 52, was admitted to the University Hospital on Feb. 16, 1928, with soreness and a swelling in the right armpit. The family history was irrelevant so far as the present condition was concerned. In 1916, she had been operated on in the clinic for a tumor of the left breast, the entire gland being removed.

The tumor proved to be an adenofibroma, and there was no recurrence. In April, 1916, the patient reappeared with a tumor in the outer half of the right breast. There was no axillary glandular involvement, and the right breast was removed in its entirety. This tumor proved also to be an adenofibroma. There was no recurrence.

The patient remained in good general health from the time of the removal of the right breast until her present admission to the hospital. At this time she complained of soreness in the right armpit, which had been present for six weeks. One month prior to admission she had first noticed a small tumor nodule in this region; this had remained unchanged. General physical examination proved her condition to be essentially normal. The Wassermann reaction of the blood was negative.

¹⁵ Thimm, P. Hypertrophie und multiple Cystadenome der Schweissdrüsenknäuel. *Arch. f. Dermat. u. Syph.* 69:3, 1904.

Examination of the right axillary region revealed the presence of a few slightly enlarged lymph nodes which were discrete and moderately firm. Just in the middle of the line of juncture of the right axillary floor and the arm there was an indurated, well circumscribed mass, the size of a small pecan, which protruded somewhat above the surrounding tissue. The overlying skin was smooth and firmly attached to the mass, which also seemed to be attached to, or incorporated into, the tendon of the anterior brachialis muscle. The skin was of normal color. There was normal distribution of the axillary hair. The skin was perfectly dry, no secretion was noted on the surface when the tumor nodule was compressed with the fingers. There was no subcutaneous fat. The tumor could be moved

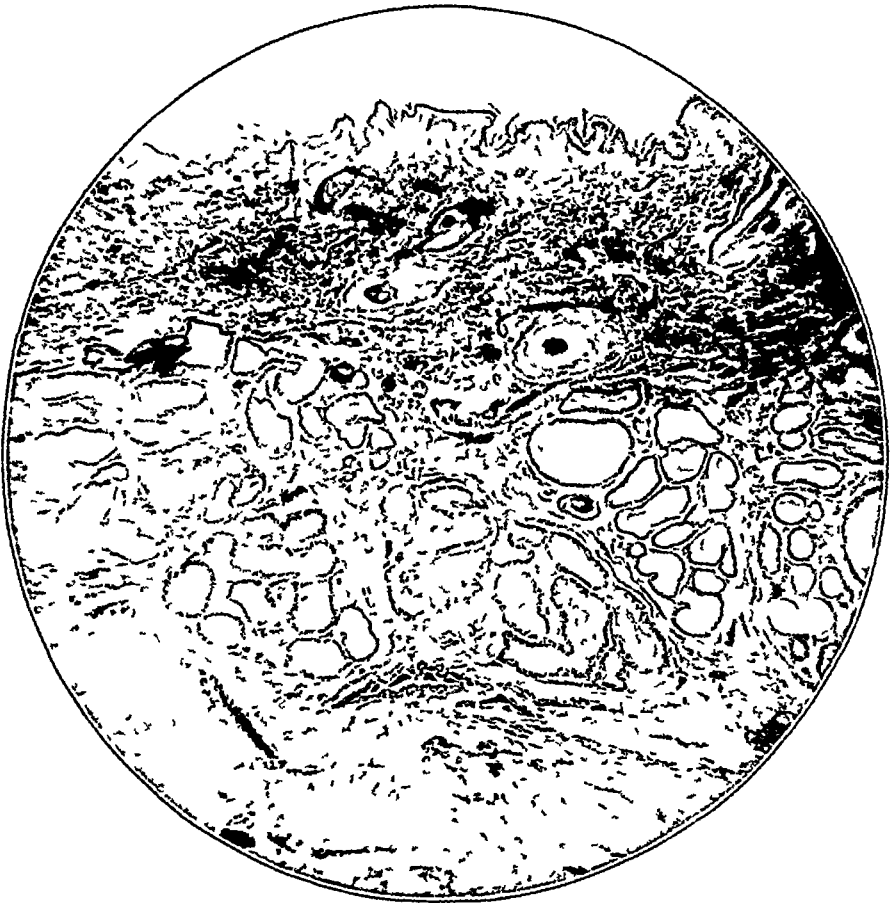


Fig 1—Typical structure and arrangement of hyperplastic glandular elements

slightly over the underlying tissues. Although the patient had complained of soreness there was no tenderness on pressure over, or compression of, the tumor mass.

At the time of the examination it was felt, in view of the history of bilateral tumor of the breast with amputation, that perhaps it was a case of axillary metastatic cancer gland nodules. Indeed, this diagnosis was made.

On the day of admission, an excision of axillary tissue, including the enlarged lymph nodes with the tumor nodule was made by Dr. A. M. Shipley. The pathologic examination yielded the following data:

Gross Pathology—The excised portion of tissue from the axilla was composed of a mass of axillary fat with a small piece of overlying skin to which was attached a fairly well defined tumor nodule about the size of a small pecan.

Several moderately enlarged lymph nodes were found. There was no evidence of metastases in the nodes.

The tumor nodule in the skin was grayish white and in several places showed an irregularity in its surface which suggested infiltrative qualities. On section through this tumor and the overlying skin it was seen that the mass was a part of the cutis and represented a hyperplasia or infiltration of tissues therein. The cut surface revealed a well defined tumor mass which was roughly oval in shape with the long axis parallel to the surface of the skin. The surface was grayish white, dry, firm and of a somewhat granular consistency. Scattered irregularly



Fig 2—Typical adenomatous structures. High power

through the grayish-white background there were elongated yellow streaks of tissue of varying size with long axes running parallel to the surface of the skin. The epidermis appeared thinner than normal, apparently somewhat atrophic. Here and there on the surface, fine whitish, translucent connective tissue strands traversed the tumor substance.

Microscopic Pathology—Blocks of tissue were sectioned from the entire dimension of the tumor nodule, they were fixed in formaldehyde and embedded in paraffin. Many sections were stained with hematoxylin and eosin, and staining was done also for the presence of iron by the method of Turnbull. These sections were counterstained with 0.5 per cent aqueous solution of safranin.

The lymph glands removed from the axilla were also sectioned and stained with hematoxylin and eosin. No evidence of metastases was found after a thorough examination of the lymph glands.

Section of the tumor showed the epidermis to be normally intact throughout, perhaps a trifle thinned out with frequent obliteration of the papillary bodies of the corium. In the layer of connective tissue there appeared to be a diminution in the number of vessels with an extensive increase in the amount of connective tissue throughout the papillary and reticular portions of the cutis. The hair follicles and sebaceous glands presented a normal appearance. They did not extend deeply into the cutis but were confined entirely to the papillary and reticular



Fig 3—Portions of apparently normal sweat ducts

areas. In most of the sections examined, the lower half of the cutis was filled with numerous secreting glandular structures, which immediately suggested sweat glands. In this area there was, in other words, an unusually extensive hyperplasia of well defined glandular structures which, with rare exception, as will be brought out later imitated the characteristic type of coil gland. These acinar structures were grouped together rather irregularly, but distinct collections were present, each group in most instances being separated from adjacent groups by a rather thick stroma of connective tissue (fig 1). Certain small groups were composed entirely of a typical coil gland structure. In such areas the glandular elements in many instances appeared to be of a typical exocrine type found gen-

erally over the body. The cells making up the coils were of distinct large cuboidal type with a large rounded or oval nucleus.

Each coil structure possessed a well defined basement membrane of connective tissue. For the most part, however, throughout the sections, the groups of gland structures presented a rather unusual appearance. In these areas the acinar structures were composed of a tall columnar cell type with a moderate sized, rounded, well staining nucleus occupying the outer third of the cell (fig 2). Surrounding this layer of columnar cells there was a rather narrow zone of a flattened or cuboidal type of cell, and beyond this latter zone there was a distinct basement membrane of connective tissue. These glandular structures were, in many



Fig 4—From section stained by Turnbull's method for iron granules. Note constriction of cells (A) prior to partial desquamation into lumen (B) which contains cellular debris (C).

instances, extremely dilated, many assuming a cystic form with some flattening of the lining cells. Occasionally a group of coil gland structures was noted to resemble those ordinarily found in the regions which have the apocrine gland type. Many of the enlarged glandular elements appeared as rounded or elongated tube-like structures with large lumina. Occasionally, within the stroma which surrounded and traversed the areas between the glandular elements comprising a group, there were found rather elongated ductlike canals with a wall consisting of two, usually three or more, layers of a deep-staining type of cuboidal cell (fig 3). These undoubtedly represented the ducts of the accompanying enlarged

and dilated sweat glands. Within the lumina of these tubular structures, there were often seen some pale pink-staining degenerative cellular elements, which apparently had desquamated.

Certain of the columnar cells which comprised the larger glandular elements apparently showed changes incident to secretory activity. These cells were quite elongated, frequently extending with irregular, pointed or rounded tips into the lumen, the extremities of the cells of opposite sides impinging on one another. These cells were swollen, their protoplasm granular, and the nuclei were somewhat shrunken and stained more faintly than the cells in the apparently nonsecreting

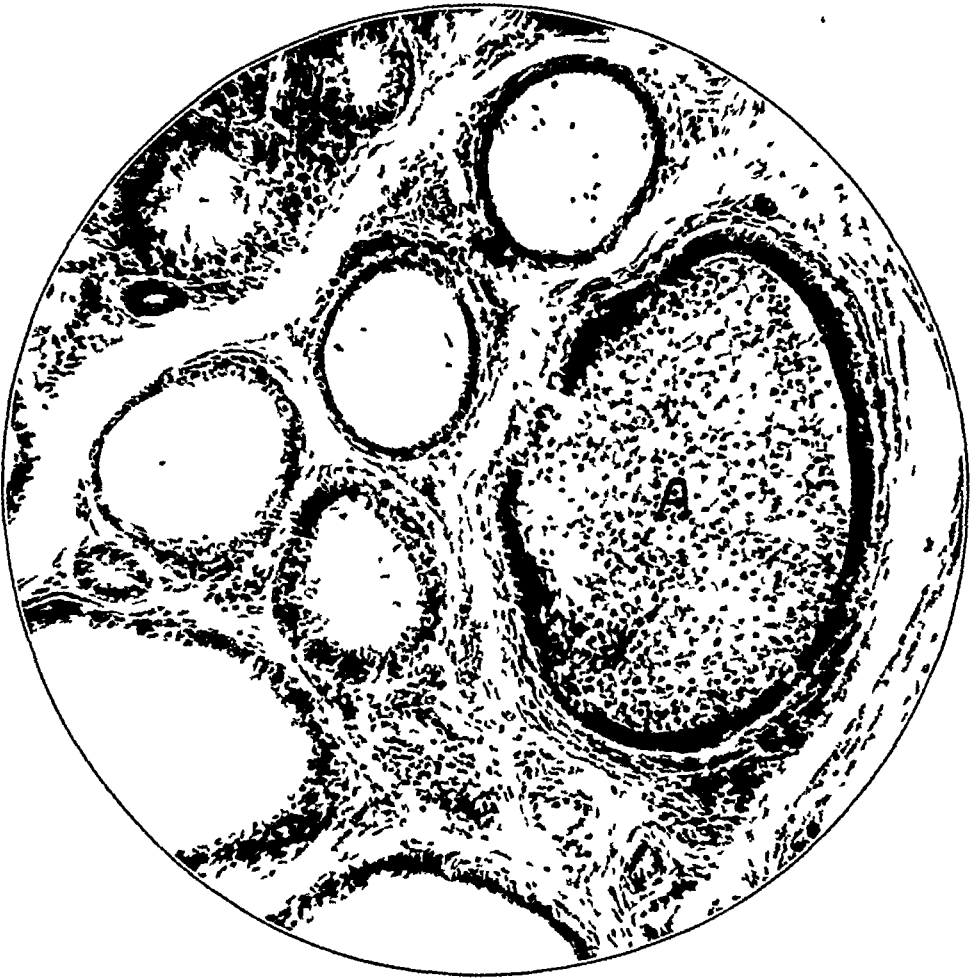


Fig 5—Glandular structures with foam cells (A) resembling the type seen in the sebaceous glands

glandular structures. In some instances it was plainly evident that the inner portion of these apparently secreting cells showed a constriction just prior to the partial desquamation of the cells into the lumen (fig 4). In some cases these desquamated cellular elements almost filled the entire lumen or the dilated glandular structure.

An interesting feature was the presence here and there of dilated glands the lumina of which were filled with large cuboidal cells the protoplasm of which presented the foamy appearance which is so characteristic of the sebaceous gland type (fig 5). However, these structures were in close association with the surrounding adenomatous elements and in no instance could they be seen to be in close proximity to hair follicles or true sebaceous glands.

Brauns, in his case report previously referred to, mentioned the occurrence of such elements in the midst of the adenoma. He pointed out that it is rather common to find a transitional change from sweat gland epithelium to the type seen in sebaceous glands. He cited an instance of this kind as occurring in normal skin surrounding a carcinoma removed from the forehead.

SUMMARY AND CONCLUSIONS

From the foregoing facts, it is apparent that in this case there was a true adenoma originating in the sweat glands of the axilla. It has long ago been recognized that there are two distinct types of sweat glands. Those occurring in the axilla and in certain other hairy regions are the so-called apocrine glands. These are larger than the second type, the exocrine glands, which are the common sweat glands occurring generally in the skin. Homma¹⁶ established certain differential factors between these two types of sweat glands. He found, among other things, that iron is frequently present in the large axillary sweat glands, but never in the exocrine glands. Since the tumor described was in the axillary position, a number of sections were stained for the presence of iron by the method of Turnbull, especially for the purpose of establishing more definitely that the tumor originated in the sweat glands. All of the sections stained showed the presence of blue stained granules of varying size grouped together in the inner portion of many of the epithelial cells comprising the glandular structures. These showed up clearly in the larger dilated adenomatous elements lined by a type of columnar cell, as illustrated in the intensely black areas noted in one or two cells in figure 4.

Portions of apparently normal sweat ducts could be found scattered here and there through the upper layers of the corium. There was no evidence of any inflammatory reaction, except that in one section there was noted an extensive monocytic infiltration which could be traced downward from a hair follicle into the subcutaneous tissue. This infiltrate was in no way associated with the adenomatous sweat gland tissue.

In this case the tumor occupied the position in the cutis where sweat glands are ordinarily present. There were normal coil gland structures in association with the adenomatous and cystadenomatous elements, there were well defined basement membranes, there was evidence of persisting function in some of the hyperplastic glandlike structures, and finally by the use of special staining, the identity of the tumor as a derivative of sweat glands was definitely confirmed.

16 Homma H. On Apocrine Sweatglands in White and Negro Men and Women, *Bull Johns Hopkins Hosp* 38 365 1926

In the face of these facts it is felt that the case illustrates clearly the possibility of occurrence of an unmistakable adenoma originating in the sweat glands. It is felt that this tumor developed as tumors of this nature develop in gland structures anywhere in the body. There was in this case no evidence of obstruction to the sweat ducts nor any evidence of external irritation, a factor which Elliot considered probable in his case. Furthermore, there was nothing in our case to suggest an origin from embryonic remnants as Chandeux suggested for his case, nor was there any evidence of a nevoid character such as Petersen was influenced to interpret in his case of naevus verrucosus unius lateris. The tumors which Brauns described and illustrated in the report of his case bear a strong resemblance in most respects to the single tumor of the present case, judging from the histologic picture. It is to be emphasized, however, that in the foregoing case a single tumor developed spontaneously in an otherwise essentially normal skin, and the identity was established both by histologic examination and by special staining.

TREATMENT OF LEUKODERMA WITH GOLD SODIUM THIOSULPHATE *

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PASADENA, CALIF

A percentage of cases of leukoderma are secondary to fungous infections, to specific diseases such as syphilis and leprosy and to many scaly eruptions such as psoriasis and ringworm. It can also be produced in certain persons by contact with various irritants such as plants, chemicals or even the rays of the sun. Sun rays, therefore, may be accountable for the prevalence of the disease among the inhabitants of tropical regions. Altered photosensitivity plays a more important part in the production of leukoderma than would be ordinarily suspected. With relatively few exceptions, the exposed parts of the body represent the preponderance of areas involved in early cases of leukoderma. It is not unusual, however, to see spots of the disease on other parts of the body.

Gupta ¹ was of the opinion that the phenomenon is due to allergy. The disease has been known to occur from conditions that produce typical anaphylaxis or urticaria. Cases of leukoderma occur occasionally from exposure to poison ivy and other irritating plants and from fungous infections such as pinta, and a case has been reported to have developed after an attack of pityriasis rosea. Trichophytids are considered by such eminent dermatologists as Pusev and Seneviratne as possibly being due to allergy. MacLeod ² has called attention to pityriasis rosea, urticaria and Cummins, among others, mentioned sunlight urticaria. The action of tissue sensitization is probably primarily a biochemical reaction, regardless of its subsequent nervous or other manifestations.

As a parallel to urticarial symptoms, vitiligo often follows pityriasis rosea. Cases of leukoderma also occur so shortly after natural or artificial sunburn that one feels more or less certain that the sun's rays are a causative factor. A peculiarity of vitiligo is that depigmented spots may appear on the body at localities remote from the irritant. This has been well illustrated by an article published by Gupta ¹. I have noticed

* Submitted for publication, Nov. 28, 1928.

1 Gupta A. Some Observations on Leucoderma, Fifteenth Annual Report of the London Dermatological Society, 1926, pp. 24, 27. Histories of both cases 1 and 2 illustrate the development of leukoderma in locations remote from the sources of irritants.

2 MacLeod J M H. Diseases of the Skin, Pityriasis Rosea, Urticaria. New York, Paul B Hoeber, 1921, p. 862.

patches of leukoderma develop on the thigh of a man suffering from pruritus ani, this may have resulted from leukoderma of the mucous membrane of the rectum as a result of fungous infection

According to Bruno Bloch's Theory of Pigmentation, "All pigment is formed in tissue through direct action of di-oxyphenylalanin (generally abbreviated to dopa), which is found more or less in blood and tissues and which, through action of a ferment (dopa ferment) in certain cells is transformed into pigment in these cells" Pigmentation of the skin is produced by biotic rays Dixon considered that pigmentation may be concerned with chemical changes in substances in the skin which fluoresce under the influence of those same rays which cause



Fig 1—A, leukoderma in a young man, aged 16 The condition was due to sunburn and had endured for three years, B, showing improvement which was noticeable after a second dose, intravenously, of gold sodium thiosulphate, C, showing apparent cure of leukoderma after seven doses, intravenously, of gold sodium thiosulphate (Courtesy of Dr F J Leavitt, Los Angeles)

erythema Pigmentation is essentially a protective mechanism against ultraviolet rays which are absorbed by the pigment melanin Those diseases which cause the patient to exhibit marked photosensitivity to the rays of the sun usually cause changes in the urine; thus hydraea aestivale and sulphonal poisoning result in hematoporphyrinuria Experimentally injections of the latter into the tissues cause dangerous sensitivity to the sun's rays In fact hematoporphyrin is a fluorescent substance which acts as a photosensitizer

In counteraction of excessive photosensitivity I have found that gold sodium thiosulphate acts admirably. Gold is used in photography as a toner, its action clinically seems to be the reverse of that of hematopoiphryn. Chemically, gold forms a suspensoid or electronegative colloid in the blood. Protein protects gold and other substances from electrolytes. The convenience of using gold sodium thiosulphate as well as its comparative safety is well known. The results which my colleagues, Dr F J Leavitt and Dr Samuel Ayres Jr, have obtained in treatment of patients with leukoderma with gold sodium thiosulphate have been as spectacular as my own.



Fig 2—*A*, a case of leukoderma, of three years' duration, occurring in a young woman. The cause of the condition was unknown, *B*, showing improvement in the same patient following two and six intravenous injections, respectively, of gold sodium thiosulphate. The patient is steadily improving.

REPORT OF CASES

CASE 1—A boy, aged 16, showing some mild symptoms of exophthalmic goiter, was severely sunburned on the face and body while swimming. He became deeply browned after extoliation of the sunburn had been completed, except on certain areas of his face which remained free from pigment and felt tender. During the course of three winters and summers these areas failed to become pigmented and showed marked tenderness on exposure to the California sun, even in winter. The areas were typical of leukoderma diagnostically and did not resemble lupus erythematosus. His appearance was conspicuous on account of the areas of

vitaligo. A noticeable improvement followed within a week after a single injection, intravenously, of gold sodium thiosulphate. The second injection rendered him practically inconspicuous within two weeks, but nevertheless the white areas showed in photographs and revealed that the pigmentation which took place was distributed throughout the areas and was not at first a progressive encroachment of pigment from the circumference or border to meet a new island of pigment in the center of an involved area, although the latter process did supervene on the primary pigmentation. The initial dose was 30 mg and the two following were 100 mg, each and were given a week apart. The improvement was so marked that I showed my patient before the Los Angeles Dermatological Association where my patient, the son of a distinguished surgeon, was well known. I later



Fig 3—*A* leukoderma of unknown source in a young medical student, *B*, the same patient vastly improved by four weekly injections of gold sodium thiosulphate. (Courtesy of Dr Samuel Ayres, Jr, Los Angeles)

exhibited him to the members of the Pasadena Branch of the Los Angeles County Medical Association. It took four more injections to clear the vitiligo from my patient so that nothing abnormal would show in a photograph, but from the very beginning all excessive sensitiveness was abolished. Aside from this and an important clinical point is the fact that the young man improved in general health and gained 20 pounds (9 Kg) in weight.

CASE 2—A Mexican woman, aged 34, apparently enjoying excellent health and without any evidence of syphilis, exhibited definite lesions of vitiligo, mostly along the outer aspect of the left arm from the shoulder to the wrist and a small

area just under the left breast. She received three weekly injections of gold sodium thiosulphate, 0.05, 0.1 and 0.1 Gm., respectively. Improvement was noticeable from the first dose but was not so rapid as in the previous case. To hasten deposits of pigment, exposures to the water-cooled quartz lamp (ultra-violet rays) were instituted at this time. While these treatments were of benefit, the area beneath the breast, where quartz lamp exposures were not given, showed a decided improvement. The pigmentation took place as in the former case, as a general coloring of the white areas, and subsequently the borders of pigment surrounding the lesions of vitiligo extended their margins inward to meet new islands of tan which appeared as isolated freckles. The latter enlarged peripherally to form peninsulas of normal color. Progress has been steady except when the gold sodium thiosulphate was discontinued for a time, when the patient could not take treatment. Nevertheless, during this interval she made some headway toward recovery. With renewed injections of the gold sodium thiosulphate her response to treatment was immediate. At the present time she has made so much improvement that she, also, has been shown before the Los Angeles Dermatological Association.

CASE 3—A young medical student, who was in perfect health, had disfiguring patches of leukoderma on his face. Gold sodium thiosulphate was administered intravenously at weekly intervals. The disfigurement was practically effaced in a short time. At the time of writing, however some traces of the condition are discernible in photographs, but the pigment is returning rapidly to the areas of vitiligo.

COMMENT

A review of the literature reveals an unsatisfactory classification of the leukodermas, and the treatment to date seems to have been most inadequate. In India a treatment common to the natives is the application of an ointment which has as its active principal an irritant, the ground seeds of the plant "*psoralea corylifolia*." Gupta, physician to the skin department of the Howrah General Hospital, India, claims that this is practically a specific in the treatment of vitiligo. P. Bhaskara Rau, medical officer of the Local Fund Hospital, Narasapatnam, India, also speaks highly of this treatment. The drawbacks to the use of the ointment are that it is slow and that sometimes keloids occur from its use, and unfortunately, it is not always successful.

DISCOLORATION OF THE SKIN DUE TO MERCURY *

LESTER HOLLANDER, M D

AND

HARRY L BAER, M D

PITTSBURGH

With the report of W H Goeckermann¹ in 1922, another etiologic factor of considerable value was added to the knowledge concerning pigmentary disturbances of the skin. He reported two cases presenting facial discolorations which resembled each other greatly. The skin of the eyelids, nasolabial folds, chin and folds of the skin of the neck were brownish gray or slate-colored. He remarked that, "at a distance of several feet the discoloration reminded one strongly of a dirty neck and face." The etiologic factor was determined by indirect evidence (as no biopsy was permitted), to be due to the action of mercury present in the face creams used by patients who were susceptible. Three years later, another report by the same author² brought to light thirteen additional cases. A more extensive investigation, including one biopsy, showed the presence of a pigment in the skin, which was soluble in compound solution of iodine. This fact and the presence of mild mercurous chloride in the face creams used by the patients further established the presumption that mercury used locally produced the skin picture described.

F J Eichenlaub, in discussing the first report of Goeckermann,¹ raised an important question: "Are we dealing with a pigment or a discoloring chemical compound in the skin? Is it a simple pigment or is it a mercurial salt or metal deposit?"

To produce direct evidence bearing on this question, the following case report is submitted.

REPORT OF A CASE

History—Miss L. H., aged 42, a cosmetician, was referred on account of a grayish-black discoloration of the face and neck which was diagnosed argyria. In 1923 a small dark spot appeared on the chin, which she thought was a comedo and tried to express several times without success. This discoloration spread slowly to the rest of the face and neck, but the process was so slow that no

* Submitted for publication, Jan 15, 1929

* From the Pittsburgh Skin and Cancer Foundation

1 Goeckermann W J. A Peculiar Discoloration of the Skin. J A M A 79:605 (Aug 19) 1922

2 Goeckermann W J. A Peculiar Discoloration of the Skin. J A M A 84:505 (Feb 14) 1925

definite notice was taken of it until 1925 when she was in a sanatorium at Battle Creek for treatment for colitis. The condition was considered a manifestation of argyria, and the patient was informed of the diagnosis. The fact that she used a 2 per cent solution of mild silver protein several times a day, dropping it into the nostrils, over a period of ten years, was considered as the source of the silver. She discontinued this practice, but the discoloration became more and more noticeable up to the time she presented herself in our office on Oct 9, 1928. Further inquiry into her daily habits furnished the following information:

For the past fifteen years the patient had used a massage cream, "Dermatone," on her face and neck, massaging the ointment into the skin daily, sometimes



Discoloration of the face, especially noted about the lips, chin, forehead and neck

twice a day, within the past four years she followed the massage with the use of an infra-red ray lamp exposing the face and neck for half an hour. In addition, she was exposed to the same infra-red rays while treating customers in her daily occupation. Her past medical history and family history were negative.

Physical Examination—The results of this examination were negative, except for the appearance of the skin. The entire face, from the hair line at the forehead to the clavicular line on the neck anteriorly, and the corresponding part of the nape of the neck posteriorly was a dirty grayish-black. On close examination of the skin black and embedded arcs the size of a pinpoint were discernible at the

follicular openings. The grayish black was not uniform about the eyelids, and about the chin and forehead the pigmentation was deepest black. The entire pigmented area was sharply demarcated where it met the normal-appearing skin, this area corresponded to that into which the patient had been massaging the cream, "Dermatone." There was no discoloration of the mucous membrane.

The history indicated that we had to deal with a metallic discoloration, the differential diagnosis of the metal involved was of considerable importance. The prolonged use of mild silver protein (ten years) in the nose, in which the absorption of silver could have occurred, was a reasonable cause, except when the fact was considered that although she stopped its use in 1925 (three years before examination), the discoloration of the face progressed.

As no formula for "Dermatone" could be obtained, a chemical examination was undertaken.

Chemical Examination of the Face Cream—In the examination³ of the ointment we used a solution in petroleum ether. There was a resulting precipitation of an insoluble white compound. The insoluble residue was treated with nitrohydrochloric acid (three parts hydrochloric acid and nitric acid one part), which dissolves mercury if it is present. The chlorine was driven off by boiling. Mercury was tested for in the evaporated material after resolution in water and the addition of stannous chloride, which threw down a copious precipitate of mercurous chloride and mercury.

Pathologic Examination of the Tissue—The next step was the investigation of a section of the skin affected. A small area, 5 by 1 cm., was excised from the side of the face, which area could be covered by the patient's hair. The section was divided into halves, one-half was sent to Dr. H. H. Permar.⁴

The pathologic report was as follows: "No evidence of globules of metallic mercury or any other foreign particular matter could be found in the section under any magnification that was available."

The information thus obtained was of little or no value, so that one half of the section of skin was turned over to Professor Alexander Silverman, head of the Department of Chemistry at the University of Pittsburgh.⁵ The procedures which were carried out and the report of this department were the following:

Determination of Mercury in the Skin by the Electromicroqualitative Method—An electromicroqualitative method had been previously reported in which the detection of minute quantities of mercury had been successfully carried out.⁶ In this method one part of mercury per billion parts of solution was susceptible to detection. It was decided to apply this method in the qualitative analysis of samples of skin suspected to contain mercury.

Two samples of the skin were placed on separate watch glasses, and 15 per cent nitric acid was added to each. These watch glasses were then placed on water baths and heated at the boiling temperature of water for two hours. At the end of this time only a few yellow pieces of solid material remained in the clear solutions.

3 The chemical examination of the face cream and the electromicrographic examination of the biopsy were performed under the direction of Prof. Alexander Silverman, head of the Department of Chemistry in the University of Pittsburgh, by Dr. E. V. Hiort and Mr. William Schiller.

4 The pathologic examination was performed by Dr. H. H. Permar, pathologist at the Mercy Hospital of Pittsburgh.

5 Booth, H. S. and Schreiber, N. E. *J. Am. Chem. Soc.* 47:26, 1925.

Chlorine was passed into the solutions, for fifteen minutes. To expel excess chlorine, air was passed through the chlorinated solutions until the odor of chlorine was no longer detectable. The solutions were concentrated to 1 or 2 cc and were electrolyzed.

In the electrolysis, platinum wires were employed as anodes and copper wires had a gage of 30, and the ends which were to be immersed were ground to fine points and then smoothed with emery cloth. The platinum and copper wires were held in place and isolated from each other during electrolysis by means of a piece of rubber. A storage battery was used to furnish a current and a postoffice box furnished the necessary resistance. Electrolysis was carried out with a current of 15 milliamperes and 15 to 2 volts.

The solutions of the two samples of skin were electrolyzed for thirty minute periods at the same amperage and voltage. During the electrolyses, the platinum anodes were immersed to a depth of approximately 0.5 cm, but the copper cathodes were so arranged that only the points were in the solutions. The electrodes were placed as close as possible in the solutions without having actual contact. At the end of thirty minutes the current was shut off, the copper cathodes were removed, washed with water and dried with clean pieces of silk. To the naked eye the points of copper showed a characteristic blackening. These points were next examined under the microscope.

In the microscopic examination, the cathode points, which rested on glass slides coated with asphaltum, were examined under a magnification of 100 diameters. Illumination was obtained by the use of a Silverman illuminator.

The samples examined showed characteristic deposits of silvery-gray mercury gathered as small globules on the tips of the copper wires. These were in marked contrast to the copper color of wires which had been polished but not subjected to electrolysis and wires which had been used as cathodes in thirty minute electrolysis of 1 to 2 cc of water acidified with one drop of 15 per cent nitric acid, which were examined simultaneously on the asphaltum-coated glass slides.

As a further proof that deposits of mercury had been obtained, these wires were heated at a distance of 2 to 3 cc from the point which had the globules of mercury by means of a micro-bunsen burner. The period of heating varied from 0.5 to 1 minute. The wires were cooled, and when reexamined it was found that the bright metallic globules had disappeared. This coincided with the disappearance of mercury from copper wires which had been used in the electrolysis of weak mercuric nitrate solutions ($\text{Hg}(\text{NO}_3)_2 \cdot \text{H}_2\text{O}$) and had been subjected to a similar treatment.

Summary—Two samples of skin suspected of containing mercury were submitted for analysis.

These were analyzed according to a previously established method for the determination of minute quantities of mercury. Analysis showed that both samples of skin contained mercury.

Discoloration of the face and neck as the symptoms alone, or as a part of a symptom complex, may result from a great number of causes. They may be considered as follows:

Derived from Blood Pigment or Hemoglobin

Purpura and hemorrhagic diathesis⁶

Fresh scars (elicited by history) following trauma⁷

⁶ Highman W. J. *Dermatology* New York, The Macmillan Company, 1921 p. 212

Fresh scars (elicited by history) following tuberculosis and syphilis⁸
Derived from Melanin

Congenital

Nevi⁶

Xeroderma pigmentosum⁷

Von Recklinghausen without tumor formation⁸

Congenital alopecia⁹

Mongolian spot⁹

Acquired

Due to physical agents

Actinic rays of light

Freckles¹⁰

Sunburn¹⁰

Chloasma bronzium¹¹—tropical mask (Cautlie¹²), bronzelike pigmentation of face occurring in tropical countries and due to sunlight, it is incurable while the patient remains in the tropics

Quarterlight¹³

X-ray¹⁰

Electrical shock¹⁴ which rendered the patient unconscious, he was presented at the Philadelphia Dermatological Society with a mottled brownish pigmentation of the entire body. This pigmentation changed from time to time with the condition of the sympathetic nervous system

Extremes of

Heat-ephelides abigne¹⁰

Cold-dermatitis congelationis¹⁰

Local irritation from pressure or friction

Chloasma trauma⁹

Chloasma calorum¹⁰

Inflammatory agents

Counterirritants and poultices⁹

Due to the administration or ingestion of toxins and foods

Arsenic¹⁵ when taken over a long period of time. The pigment¹⁶ may

7 Crocker, H. R. Diseases of Skin, Philadelphia, P. Blakiston's Son & Company, 1908, p. 686

8 Sabouraud, C. F. Regional Topographical Dermatology, New York, Rebman Company, 1916, p. 611

9 MacLeod, J. J. R. Diseases of Skin, New York, Paul B. Hoeber, 1920, pp. 690, 716, 716, 450, 915, 948, 853 and 1231

10 Stelwagon, H. W. Disease of the Skin, Philadelphia, W. B. Saunders Company, 1921

11 Sequeira, J. H. Disease of the Skin, ed. 4, New York, The Macmillan Company, 1927, p. 78

12 Cautlie, I. Trop. Med. 1908, quoted by Sequeira (footnote 11)

13 Colquhoun, K. G. Keratosis and Fixed Pigmentary Deposit Following Quartz Light Therapy. Brit. J. Dermat. 39:346 (Aug-Sept) 1927

14 Stelwagon, H. W. J. Cutan. Dis. 33:636 (Sept) 1915

15 Osler, William. Practice of Medicine, New York, D. Appleton & Company, 1910, p. 681

16 Gans, Oscar. Histologie der Haut Krankheiten, Berlin, Julius Springer, 1925, p. 121

be yellowish then dirty red brown, darker bronze, or it may be composed of black spots, which become confluent, at times giving the face the appearance of sunburn, Stockman¹⁷ described a case resembling Addison's disease

Silver¹⁸

Chloral¹⁹

Acriflavine,²⁰ after fifteen intravenous injections of 10 cc of 2 per cent acriflavine, used in a patient having gonorrhea, the surfaces of the skin exposed became deeply pigmented due to the action of sun rays, although the patient was a native and used to the strong sun

Vegetarian diet,²¹ pigmentation may result from eating excessive amounts of carrots, squash, liver and cucumbers

Associated with general metabolic disease

E\ophthalmic goiter,²² abnormal pigmentation develops as noted by Drummond, the pigmentation²² is brownish yellow either in freckle-like spots or in more or less diffuse discoloration

Scleroderma,²³ in rare cases pigmentation may be deep and general
Facial hemotrophy⁸

Blood changes in infections

Pernicious anemia,²⁴ pigmentation may be extreme, simulating Addison's disease²⁵

Jaundice²⁶

Leukemia²⁴

Lymphadenoma²⁶

Malaria,²⁶ here the pigmentation is uniform in color and is dirty gray, it does not affect the mucous membrane

General disturbances

Chronic heart disease²⁵

Bronze diabetes or diabetes²⁴ hemochromatosis,²⁷ the discoloration occurs on the uncovered surfaces and varies from a

17 Stockman, R S Arsenical Pigmentation of the Mouth and Skin, Brit M J 2 852 (Nov 10) 1923

18 Firth, D, and Harrison, G A Argiria, Brit J Dermat 36 105 (March) 1924

19 Cunningham, W P The Practical Medical Series, 1913, vol 9, p 8

20 Noltemous, Friedrich Zwei Falle von Hautschädigung durch Trypaflavin unter intensiver Sonnenbestrahlung, Munchen med Wchnschr 74 1497 (Sept 2) 1927

21 Hashimoto H Carotinoid Pigmentation of the Skin Resulting from a Vegetarian Diet J A M A 78 1111 (April 15) 1922

22 Stelwagon (footnote 10, page 523)

23 Gans (footnote 16, page 125) Schucany Cutaneous Pigmentation in Pernicious Anemia Arch f Dermat u Syph 121 746, 1916, abstr in Arch Dermat & Syph 2 666 (Nov) 1920

24 Elliott, J A Leukemia Cutis, J Michigan M Soc 17 19 (Jan) 1918

25 Cole H N Hodgkin's Disease, J A M A 69 341 (Aug 4) 1917

26 Gans (footnote 16, page 127)

27 Mason F R Endocrine Glands, Philadelphia, J B Lippincott Company, 1922, p 148

- bronze to a slate color or a grayish black Associated²⁸ with enlarged liver and usually glycosuria
- Chloasma of pregnancy,²⁹ discoloration usually limited to face, the so-called "masque des femmes enceintes"
- Cirrhosis of liver,³⁰ the pigmentation is of slatelike color, resembling mercurial ointment
- Addison's disease,³¹ the color change is from light yellow to brown and even black The pigmentation is diffuse but always deeper on the exposed parts and in the regions in which pigmentation is intense, as the areola of the nipples, etc It may at first be confined to the face and hands It affects the mucous membranes Addison's disease³² may be caused by
- Tuberculosis
 - Atrophy-syphilis, fibrosis and gumma
 - Neoplasm-infarction, hypoplasia
 - Echinococcus, etc, involving the suprarenals or chromaffin system
- Ochronosis,³³ the color change occurs from yellow to brownish black Gans quoted Poulsen who said that the ears, eyes and nose are most frequently affected It is a disorder of metabolism,³⁴ the chief symptoms of which are blackening of the cartilages and the appearance of dark colored urine due to homogentistic acid or derivatives of carboic acid (Osler³⁵) Kolaczek³² reported it as a familial disease
- Tuberculosis³⁵
 - Chronic infections⁹
 - Pellagra⁹
 - Carcinoma of the abdomen¹⁵
 - Disease of the pancreas⁹
 - Neurasthenia²⁸
 - Chronic constipation⁹
 - Rheumatoid arthritis³³
 - Kala-azar⁹
 - Carate or mal del Pinto³⁴ pigmentary changes are blue, violet, red, black, yellow or white
 - Myxedema³⁵

28 Tidy, H L Synopsis of Medicine, New York, William Wood & Company, 1920, p 327

29 Warthin A S, Crane, M W, and Jackson, J B Pigmentation of the Skin Associated with Lymphosarcoma Involving Particularly the Retroperitoneal Lymph-Nodes of the Solar Plexus, Arch Dermat & Syph **10** 159 (Aug) 1924

30 Gans (footnote 16 page 120)

31 Monographic Medicine New York, D Appleton & Company, 1916 vol 5 p 24

32 Kolaczek Beitr z klin Chir Tubing **71**:254 1910-1911

33 Douthwaite, A H Rheumatoid Arthritis Brit M J **1**:1171 (June) 1925

34 Fox Howard Carate (Pinta) as Observed in Colombia South America, Arch Dermat & Syph **18**:673 (Nov) 1928

35 Krantz C I and Means J H Pigmentation in Myxedema Boston M & S J **95**:518 (Sept) 1926

Lymphosarcoma³⁶Chronic gastric ulcer³⁵Arteriosclerosis³⁴

In association with skin diseases

Eczema⁹Lupus erythematosus, disseminated type⁹Lupus vulgaris⁹Melanodermatitis toxica lichoides³⁸ resembles arsenical pigmentation and affects uncovered skinHydroestivale⁹Keloid³⁷Iris type of erythema multiforme³⁸Urticaria pigmentosa⁹Acanthosis nigricans,³⁹ the pigmentation may be from sallow yellow to bronze to dark dirty brownTinea versicolor⁴⁰Mycosis fungoides⁴¹Comedones,³⁴ pigmentation may be due to innumerable small black comedones

Derived from Chemicals Absorbed from the Skin

Arsenic⁹Mercury¹Silver⁴Gold⁴²Copper⁴⁴ pigmentation of exposed surfaces occurred in a patient while she was polishing copper screws in machine oilExplosives⁴³Mineral dusts⁴³

TREATMENT

We attempted to dislodge the mercurial deposit by local treatment. The chemical indication was to use tincture of iodine, which was briskly rubbed into the skin to form a soluble mercuric iodide, this was followed by the application of alcohol to dissolve the new compound

36 Gans (footnote 16, page 121)

37 Crocker (footnote 7, vol 1, p 134, vol 2, p 936)

38 Pusey W A The Principles and Practice of Dermatology, New York, D Appleton & Company, 1917, p 187 Ormsby, Oliver Diseases of Skin, Philadelphia Lea & Febiger, 1927

39 Pusey (footnote 38 page 905) Stelwagon (footnote 22)

40 MacLeod (footnote 9, page 441)

41 Darier and Pollitzer Textbook of Dermatology, Philadelphia, Lea & Febiger 1920, p 658

42 Haberman R Argiria Due to Silver Salvarsan, Dermat Wchnschr 40 65 (Jan) 1924 MacLeod (footnote 9, page 952)

43 Schamberg, J F Chrysoderma A Permanent Gold Staining of the Skin, Arch Dermat & Syph 18 862 (Dec) 1928

44 Ravaut, P, and Vibert J Follicular Keratosis and Melanosis, Bull Soc franç de dermat et syph 3 214 (April) 1927

45 Pusey, W A The Principle and Practice of Dermatology, ed 4, New York D Appleton & Company 1924, p 966

Much to our surprise the skin of the patient tolerated this harsh treatment well, and the amount of improvement was markedly noticeable. However, the patient stopped reporting for treatment, and we are unable to report on her exact condition at the present time.

SUMMARY

Direct evidence is presented in a patient showing a peculiar discoloration of the face and neck by demonstrating mercury in the tissues of a discolored area by the electromicroqualitative method, mercury was not revealed by the ordinary pathologic examination.

631 Jenkins Building

AN UNUSUAL VASCULAR NEVUS

REPORT OF A CASE *

JEFFREY C MICHAEL, M D

AND

W A CLARK, M D

HOUSTON, TEXAS

Two years ago we encountered a case which was unique in our experience. Photographs and descriptions of the disorder were sent to a number of dermatologists of large experience, and with the exception of one of them (Prof Udo Wile of the University of Michigan) none recalled having seen anything like it. We have also reviewed a considerable amount of dermatologic literature without finding a record of a similar case. On account of its rarity and certain features of interest, we believe that a report of the case is justified.

REPORT OF CASE

A Mexican waif of the peon class, aged 12, presented himself at the Skin Clinic of the Jefferson Davis Hospital on Aug 4, 1926. The patient's skin was dark brown, his hair and eyes were black. Information about his family history was so vague that it was valueless. The only definite statements made by the patient about his skin disorder were that he first noticed it when he was 3 years of age and that it had progressed from the scapular region downward. We took these statements to refer only to certain tumor formations which bled readily, and therefore frequently attracted his attention. He had lost weight and strength during the last year or so, but had no symptoms of systemic origin. The skin disorder had never been treated by a physician.

General Examination—Inspection gave the impression of undernourishment. There were no skeletal deformities. The mucous membranes were pale but otherwise normal. Examination of the viscera by the usual methods did not reveal any abnormalities. A roentgenogram of the chest showed suspicious signs of tuberculosis of the lungs but further examination, roentgenologically and otherwise, failed to substantiate this observation. A Pirquet tuberculin test gave a negative result. Results of two Wassermann tests of the blood were reported negative. A routine examination of the blood showed moderate secondary anemia. Several urinalyses did not reveal any abnormalities.

Description of Skin Disorder (fig 1)—The skin lesions occupied an area about 8 inches square (20.32 cm.) in the lower dorsal region, mainly to the right of the spinal column. From a distance, the appearance was that of a group of large granuloma pyogenicum. Closer inspection, however, disclosed three types of lesions and these will be described individually.

Macular Type—There were about twenty lesions of this type, and for the most part they were scattered on the periphery of the involved zone. The lesions were rose-red or pink, round or oval, impalpable and obliterated readily by pressure.

* Submitted for publication, Dec 6, 1928.

* From the Dermatologic Section, Jefferson Davis Hospital, Houston, Texas.



Fig 1—Appearance of the disorder when first seen

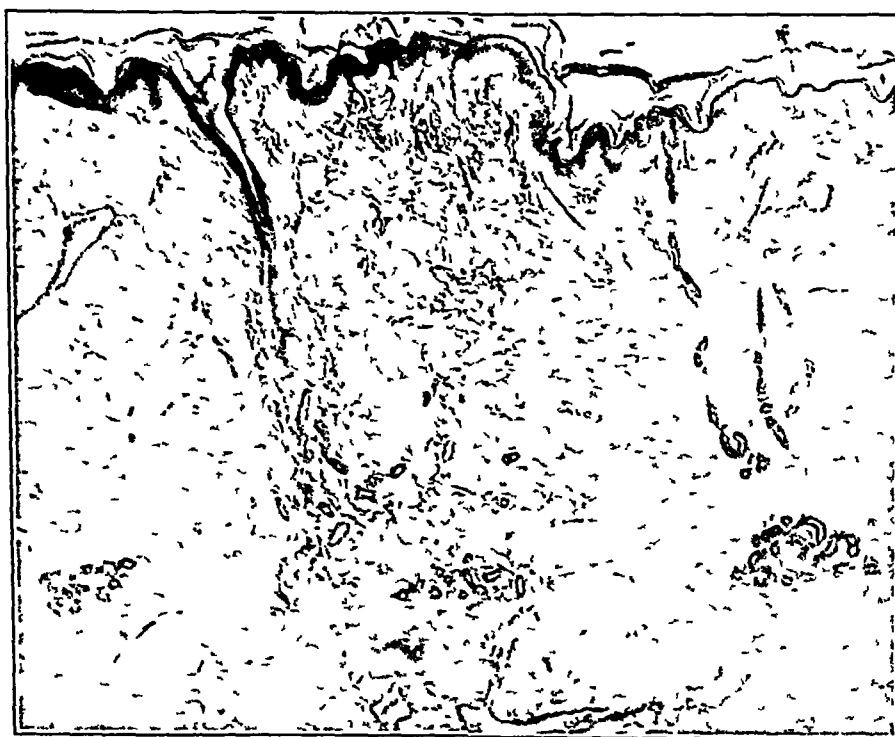


Fig 2—Macular type, low power

Their surface was smooth. They were fairly uniform in size with an average diameter of about 3 mm. Close inspection showed that the color was due to capillaries which were individually indistinguishable except on the periphery of the lesion where their fine tortuosities could be traced for a short distance, especially with diascopic pressure.

Nodular Type There were four lesions of this form. They were dome-shaped, lilac colored and larger than the foregoing lesions, having an average diameter of about 6 mm. They were compressible and simulated small angio-



Fig 3—Macular type showing the character of the blood vessel increase in the upper cutis, high power

matous nevus. Two carried on their summit a small macule of the first type, and these two appeared to be developing beneath and beyond the former lesions. With firm pressure these lesions disappeared completely. All of them were situated near the upper pole of the involved area.

Tuberoso Type There were twenty-two of this type which resembled granuloma pyogenicum. All were pedunculated with stems of varying thickness, and they varied greatly in size. In some, a thin red skin covered the surface, giving the appearance of a ripe tomato; in others, the surface was roughened, lobulated and deeply fissured. Some were freely movable on thin pedicles, most of them,

however, had thick stems and were movable only with the skin. Several of the larger lesions arose from a base of brownish or purplish infiltrated skin. This firm base extended for more than 5 cm. from one pedicle.

There were two projecting lesions which were covered with nearly normal skin. One was about the size and shape of an infant's little finger, the other had an indented edge. While not closely resembling the tuberoso type, we judge that they were variants of it.

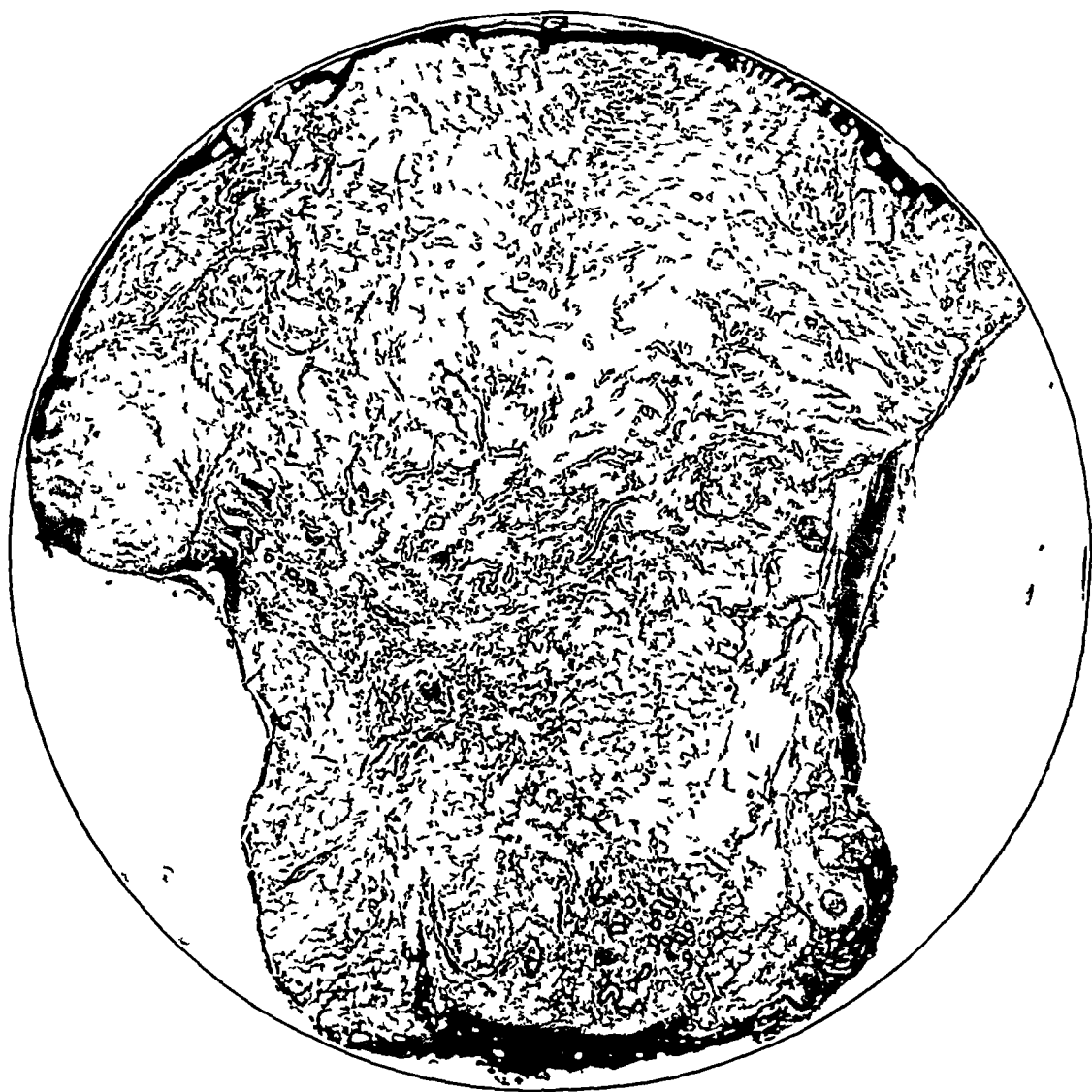


Fig. 4—Entire lesion of type 2, low power

The skin of the greater part of the involved area was moderately thickened and irregularly pigmented. The only other cutaneous anomaly was a small pigmented nevus situated over the right scapular spine.

Summarizing the disorder was composed of isolated pink macules evolving into soft compressible raised masses resembling angiomatous nevi and finally into lesions suggesting granuloma pyogenicum the whole arising from a moderately infiltrated and pigmented area. This latter feature appeared to be an integral part of the process and not a reactive phenomena resulting from dirt, secretions and

dried blood which were present until he came under our care. The two peculiar skin-covered projections were regarded as variants of the fungoid masses, differing in that epidermal growth kept up with the proliferation in them of granulation tissue.

Treatment and Course—The patient was kept under observation at the clinic and in the Jefferson Davis Hospital for about three months. During this time dressings of 2 per cent boric acid were the only treatment. One of the fungoid



Fig 5—Characteristic area of type 2, high power

masses became gangrenous and disappeared, while the smallest finger-like process gradually shrunk and nearly disappeared, otherwise, there was no change.

He was referred to the surgical service of the hospital, and the fungoid masses were removed by the cauterization by Dr P H Scardino. The cauterization was deep into the site of the pedicles. Healing followed with a gain in weight and strength. He was under observation for another six months. During this time one of the lesions showed recurrence in the scar, a small red mass forming which did not grow after reaching the size of a pea. We saw the patient for the last time on March 18, 1927. The pigmentation and infiltration of the involved sur-

MICHAEL-CLARK—VASCULAR NEVUS

face was still present, and we had the impression that more macular lesions had formed since the time he first came under observation. The recurrent lesion was not removed because we wished to watch its development.

Histology—For this study a macular, tuberoso and fungoid lesion were removed. The sections were fixed in paraffin. We have only hematoxylin-eosin preparations for study, as the cut sections intended for other stains were unfortunately misplaced and lost.

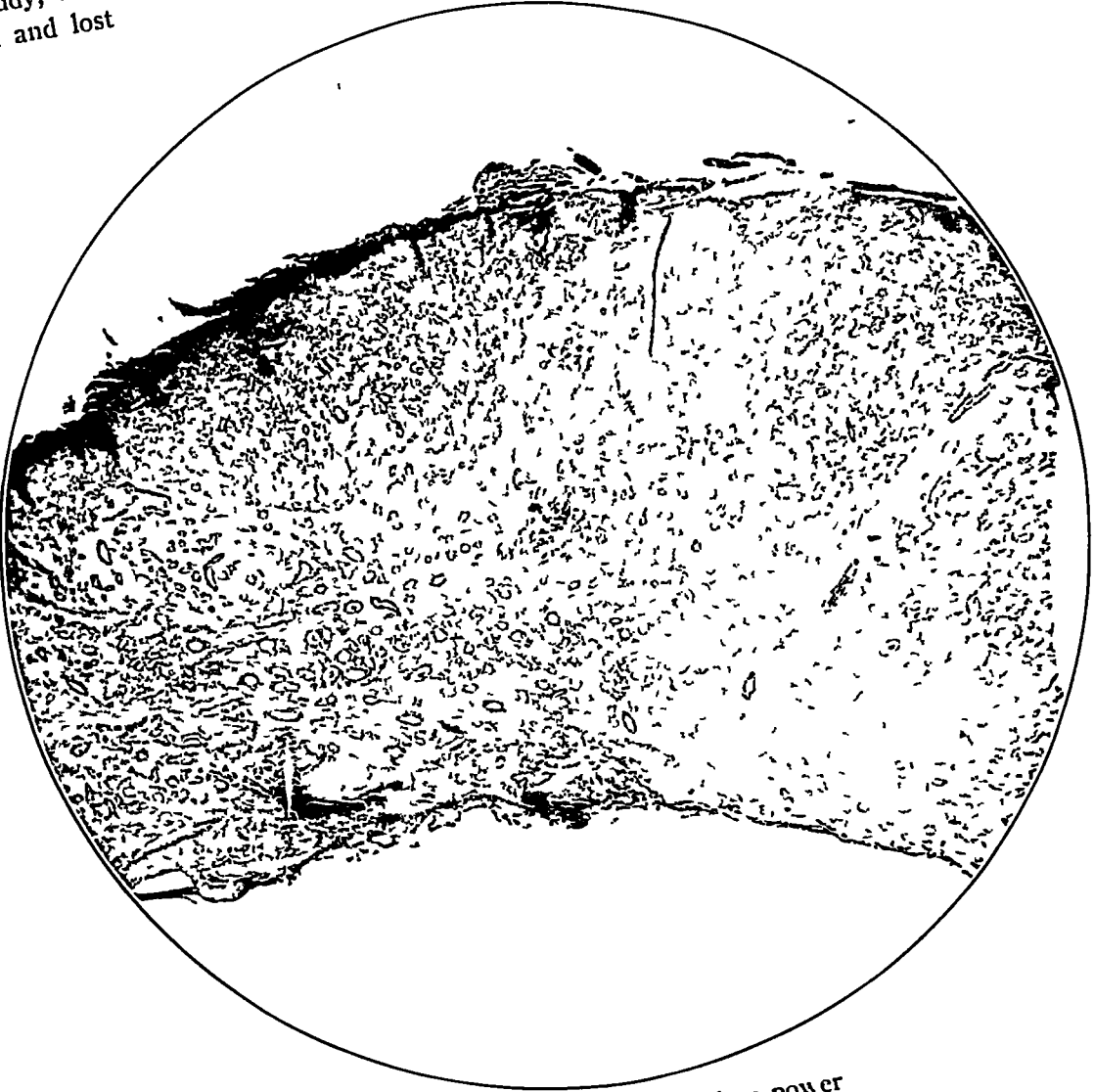


Fig 6—Fungoid type, low power

Type 1 (figs 2 and 3) The macular lesion did not show any epidermal changes except an absence of rete pegs over the dermal changes. The outstanding feature was a decided increase in the number of blood vessels in the upper third of the cutis. These vessels ranged in size from small and just developing capillaries to fairly large, irregularly shaped vascular lakes, a few of which were partially or completely filled with erythrocytes. A definite proliferation of blood vessels was undoubtedly taking place and this proliferation had resulted in displacement of the collagenous tissue without encapsulation however. The newly formed blood vessels showed normal endothelium.

The collagenous bundles within and beneath the area of vascular proliferation were disorganized to a certain extent. There were no infiltrating cells. The lymph spaces were moderately dilated. The fat and coil glands were normal.

Type 2 (figs 4 and 5) In the angiomatous type the epidermis was thinned and the rete pegs missing over portions of the lesion. The corium showed changes involving its whole extent, the outstanding feature being a great increase in blood vessels. These vessels varied greatly in size. The majority had slitlike lumina, a few were rounded or oval. Nearly all were empty, none showed more than a few red blood cells in their lumen. The endothelial cells were normal.

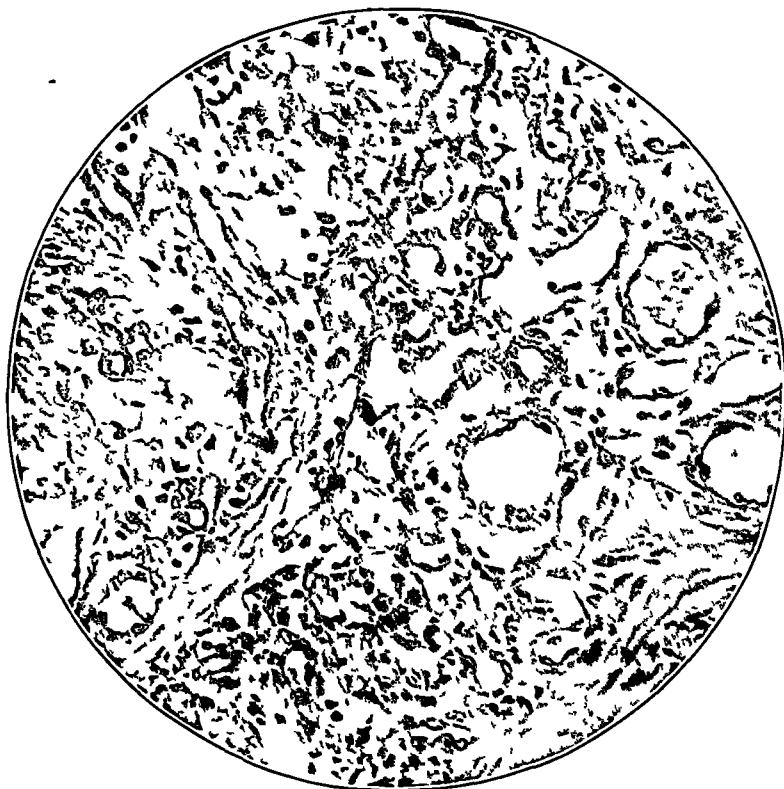


Fig 7—Deep area of the fungoid type, high power. Note the absence of any sarcomatous change.

The connective tissue was somewhat denser than normal, and the bundles paralleled the surface in the upper cutis, while in the deeper part the bundles were either broken up or compressed. There was an increase in the number of connective tissue nuclei. There were a moderate number of infiltrating cells in the upper cutis chiefly fibroblasts with a few eosinophils and a number of large, deeply basic-staining cells of the endothelial type. There was no encapsulation of the evident vascular proliferation.

Type 3 (figs 6 and 7) In this fungating type the histologic picture was essentially that of granulation tissue. Over a large part of the surface the epidermis was missing and the eroded portion was covered with a serofibrinous crust containing cellular debris and leukocytes. The mass of the tissue was com-

posed of numerous, small variously shaped vessels which were embedded in a framework of loose connective tissue presenting more or less edema. Cellular elements of the usual types found in granulation tissue were present. There was no evidence of sarcomatous change.

COMMENT

Our study of the clinical and histologic features of this case led us to assume that the disorder was an angiomatous nevus. The onset of the condition at an early age, the circumscribed location and the preponderance of the vascular elements in its structure support this assumption. Acquired diseases, such as Kaposi's sarcoma and mycosis fungoides, can be dismissed without serious consideration. The development of sarcoma from hemangioma is well known. This obtrudes itself in a discussion of our case. In regard to this possibility we can only say that our study, as far as it went, did not disclose any evidence of malignant change. We realize that we should have studied microscopically the tissue taken from an infiltrated area of the skin from which some of the pedicles arose. The possibility of sarcomatous change was mentioned by Prof. Rudolph Matas of New Orleans, who, in a personal communication, posed the question whether or not total ablation of the entire disturbed area was indicated in view of the malignant potentiality present.

Prof. Udo Wile, who wrote us that he had seen at least one similar case, assumed that the condition was a vascular nevus and that the fungating masses were true granuloma pyogenicum developing from the macular lesions. While we cannot completely rule out this idea, it does not coincide with our view of the case. Rather we regard the process as a continuous one, beginning as a proliferation of the subpapillary vascular plexus as seen in the early telangiectatic spot and progressing to the formation of large fungating masses. We think the connective tissue element in the case is secondary to the blood vessel proliferation. It should be mentioned here that we scratched and otherwise traumatized several macular lesions and watched the patient at least five months thereafter without seeing any change in them. Of course, this does not rule out the idea of granuloma pyogenicum as an epiphenomenon in the case, since the pathogenesis of that disorder is still in dispute.

Our case presented features which reminded us of tuberose angioma. One of us saw a remarkable case of this condition in the practice of Drs. J. B. and Bedford Shelmire of Dallas, Texas. In their patient, a child of 4 years, vascular tuberose masses developed in a circumscribed area. This area showed a network of capillaries as well as larger vascular trunks. The skin was not infiltrated. The masses were firm and round, never lobulated or fissured. Unfortunately, owing to the patient's refusal, a biopsy was unobtainable. Study of that case in its

clinical aspects and of a number reported in the literature leads us to believe that our case is allied to, or perhaps a variant of, that type of vascular nevus

Our case showed some of the features described by Kiess¹ under the title "Angiofibroma circumscription symmetricum multiplex." Kiess' patient presented numerous projecting lesions in the genital area. The histology was that of angiofibroma. Similar features in Kiess' case and our case were the circumscribed localization and the histologic structure (at one stage in our patient), dissimilar features consisted of the difference in the age of onset, and the presence of a succession of lesions from macular to fungoid in our case. To sum up, in our case we see one of two ways of explaining clinically the appearance of the condition, namely, that true granuloma pyogenicum has arisen from small isolated vascular nevi, or that an angiomatous growth has developed by successive steps from a macular to a fungoid lesion. We favor the latter presumption.

Dr Fred D Weidman, of Philadelphia, has supplied the photomicrographs

1017 Medical Arts Bldg, The Houston Clinic

1 Kiess, O. Eine eigenartige Form von Hauttumoren in der weiblichen Genital-Region (Angiofibroma circumscriptum symmetricum multiplex), *Dermat Wchnschr* 82 733, 1926

TINEA AMIANTACEA *

S WILLIAM BECKER, M D

AND

KATHLEEN B MUIR, M D

CHICAGO

Tinea amiantacea (asbestos-like tinea) is the name given by Alibert¹ to a disease of the scalp in which heavy scales extend onto the hairs and separate and bind together their proximal portions. The process may be only slightly inflammatory with dry, micaceous scales, or markedly inflammatory with admixture of a crust. Alibert mentioned an early moist stage, followed by a drier one. Removal of the scales reveals normal or erythematous, edematous epidermis. The condition usually appears during childhood, generally on the crown. It may be circumscribed or diffuse. It is chronic but curable. It is not followed by atrophy, scarring or alopecia. Microscopic section has shown normal hairs, with completely cornified epithelial cells in the scales, not infrequently between islands of coagulated serum. Little information is available regarding the cause except that the condition often occurs on a preexisting dermatosis, such as herpes tonsurans, alopecia areata, pediculosis, pyoderma and so forth. It has been variously classified as a form of eczema and as a form of seborrheic dermatitis.

Reports of cases have been largely confined to French literature. Knowledge of the condition was recently summarized and a bibliography compiled by Friedman,² who reported four cases. He was able to find yeast cells in fresh preparations of the scales in all four cases, and succeeded in culturing yeasts in three of them. Three of his cases were of the circumscribed and one of the diffuse form. He was unable to obtain specimens for biopsy.

We have been unable to find any comment on the disease in American literature, hence, we consider it fitting to report three cases studied in this clinic in the past year.

REPORT OF CASES

CASE 1—A housewife, aged 55, complained of a lesion of the scalp of three weeks' duration. The family history was unimportant. She had had questionable psoriasis, limited to the nails, for twenty-one years. "Patches of dandruff" had

* Submitted for publication, Jan 16, 1929

* From the Division of Dermatology of the Department of Medicine of the University of Chicago

1 Alibert. Monographie des dermatoses, Paris, 1832, vol 1, p 463

2 Friedman, M. Ueber die sogenannte Alibertsche Tinea amiantacea, Arch f Dermat u Syph 149 176, 1925

been present at times, for which she had used petrolatum and tar soap. Her attention had been called to the lesion in question by the resistance offered to her comb. On examination, she discovered a patch over the vertex, covered by heavy scales. She did not know the exact size of the lesion when it was first noted, but was certain it had progressed thereafter. Only petrolatum had been used locally.

The general physical examination revealed only badly infected teeth. The urinalysis, the blood count and the Kolmer-Wassermann and Kahn reactions of the blood revealed normal conditions. The epidermis was slightly thickened beneath the free margins of the nails. On the scalp, extending from the vertex to the right and anteriorly, was an irregular plaque from about 5 cm. to 10 cm. in diameter, covered by thick scales extending onto the hairs for a distance of about

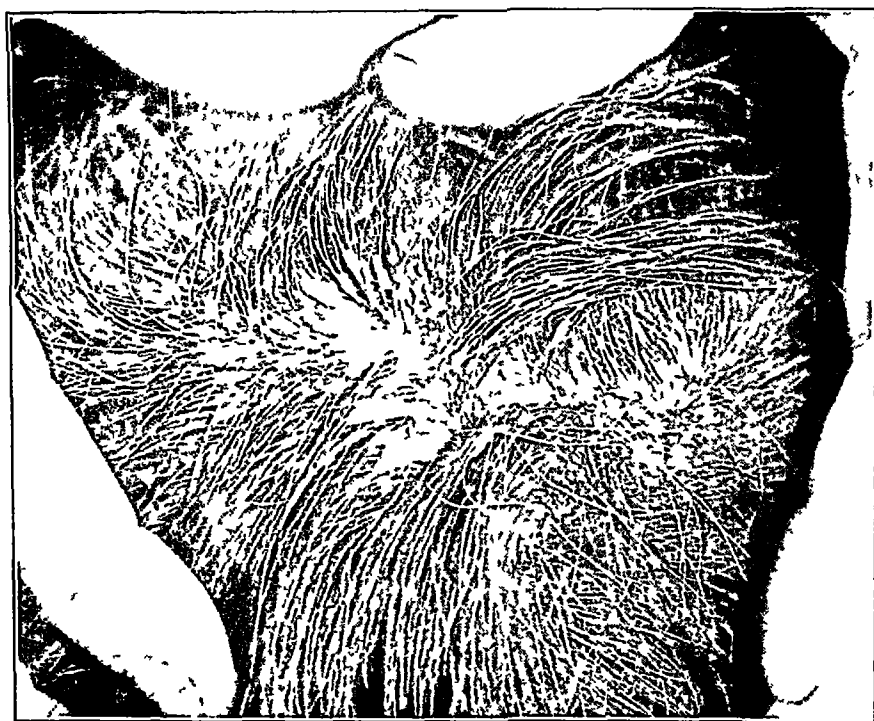


Fig 1 (case 1) —Some of the hairs have been separated to give a better idea of the scaling.

0.75 cm., and binding them together (figs 1 and 2). The hair was partially bound down to the scalp by this mass of scales. As the hairs were elevated and the scales separated from the underlying epidermis, the latter was seen to be involved in varying degrees of inflammation, appearing erythematous and edematous. Where the inflammation was most marked, tiny, filiform epidermal processes could be seen, coursing parallel to the hairs. Daily application of 5 per cent ammoniated mercury ointment resulted in a complete healing in a few days.

Histologic examination revealed the following. Tissue was removed from the border of the scalp lesion. An unsuccessful effort was made to section the tissue so that individual hairs could be studied in their entirety. Extending for a considerable distance above the epidermal surface was a loosely bound, lamellated admixture of parakeratotic epithelium and coagulated serum, with a predominance of the former (fig 3). The serum was contained in cell-like compartments, and

appeared to be between or actually within the parakeratotic cells (fig 4). Polymorphonuclear leukocytes were present in varying numbers in the scale and especially in the crust. That portion of the scale immediately surrounding the hairs did not show any nuclei, except along one hair, which was adherent to and encased in the entire follicular epithelium. The most superficial layer of the epithelium varied from naked prickly cells, through parakeratotic cells to normal keratinized cells. Stratum granulosum was present only in the last instance, and tended to be rather thick. The stratum germinativum was acanthotic for the most part, but extremely thin over some of the papillae. The cells were involved in edema, mostly intracellular. An exudate rich in fibrin could be seen in the superficial perifollicular epidermis (fig 5). Small round cells could occasionally be seen in the epidermis. The rete processes tended to be long and narrow, and the papillae broad and edematous. In the papillae, and especially about the dilated vessels of the dermis, was a loose infiltration of small round cells. Portions of the scales were mounted in a 10 per cent aqueous solution of potassium hydroxide and placed in a moist chamber. A large amount of fungus-like material was evident in from six



Fig 2 (case 1) —Hairs. The proximal portion is bound together by asbestos-like scales.

to twelve hours, although isolated elements could be seen in a few minutes. Some elements were single and some double, and many had formed mycelium-like tubes. Their walls were both thick and thin, and most of them were double contoured.

Some of the scales were placed on Pennsylvania medium (Pennsylvania medium is made up as follows: dextrose [crude lumps, Dolbey, Philadelphia], 40, peptone [Chassaign], 10, agar, 18, and distilled water to 1,000). From some of the scales on this medium grew heavy, cream-colored colonies. In transplants on the same medium, the colonies were large, with sloping margins. No peripheral hyphae were seen, and no extension into the medium was noted. Old colonies became brown. Broth cultures and hanging drop preparations showed budding yeast cells, but not mycelium. The organism found was *Cryptococcus*.

After the lesion was entirely healed, the hair was clipped short over a small area, and the skin curetted. Material from a pure culture was rubbed in and the region covered with sterile gauze and collodion dressing. No signs of inflammation were noted.

The skin of guinea-pigs was sandpapered, and material from a fresh culture was rubbed in. Aside from slight crusting, possibly due to the trauma of sand-



Fig 3 (case 1)—Low power photomicrograph of a section taken from the border of the lesion. Hematoxylin and eosin stain. Considerable blood can be seen between the main part of the scale and the epidermis. The scale was overhanging.



Fig 4—High power view of epidermis and dermis. Hematoxylin and eosin stain.

BECKER-MUIR-TINEA AMIANTACEA

papering, no signs of inflammation became visible Intracutaneous injection of a dilute saline suspension of the organism was followed by little, if any, inflammation The results of inoculation both of the patient and of the guinea-pigs may be considered negative

CASE 2—A girl, aged 15, presented a lesion of the scalp of six years' duration The family history was unimportant She had not had any other dermatosis Six years previously, an erythematous lesion 5 cm in diameter appeared just within the hair line above the left ear It was capped by yellowish crust, the removal of which left an oozing surface The lesion appeared in the summer, after swimming

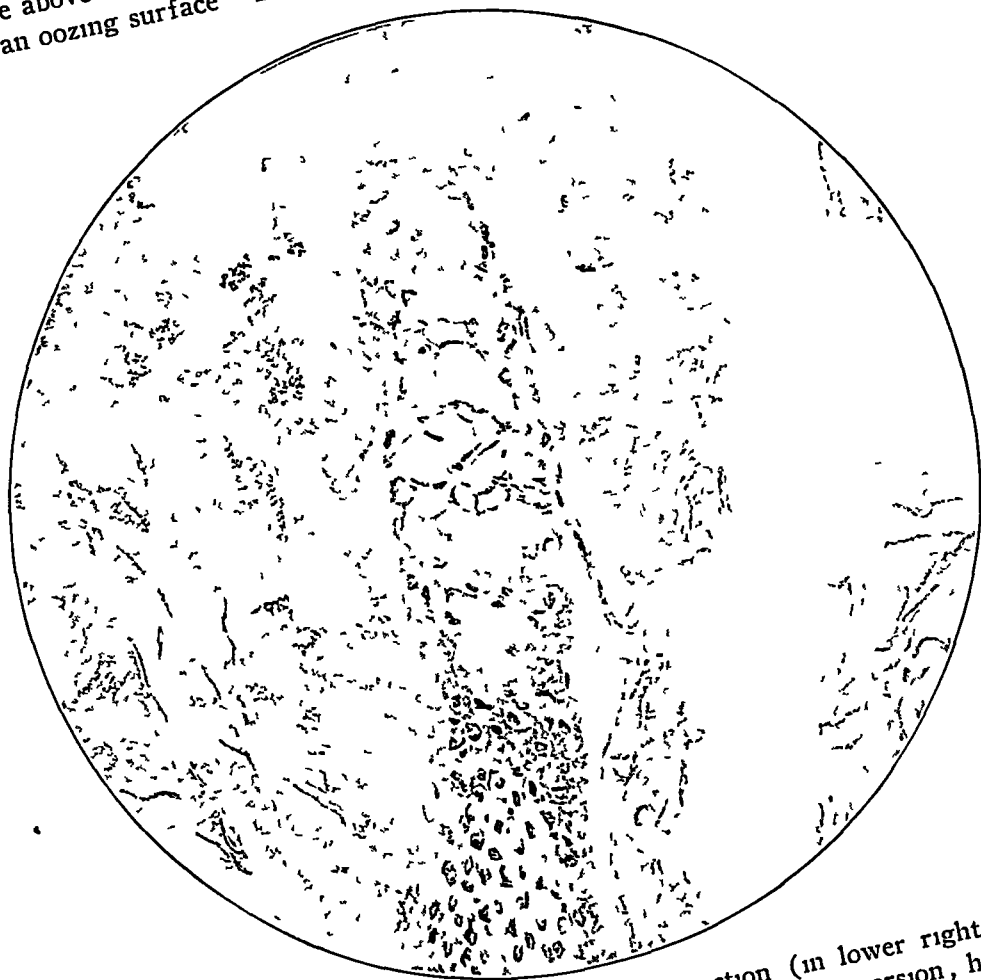


Fig 5—High power view of a filiform projection (in lower right corner of fig 3) The homogeneous substance is rich in fibrin Oil immersion, hematoxylin and eosin stain

in Lake Michigan A month later a similar lesion appeared above and behind the right ear, and disappeared spontaneously in a few weeks The condition on the left side had never entirely healed, although at times it had been as small as 0.5 cm in diameter Local treatment had consisted of zinc oxide ointment, mild silver protein, boric acid dressings and some sort of mercuric ointment The present exacerbation was the most severe and extensive, and followed swimming in the lake It extended from a plaque 5 cm in diameter to one covering practically the entire left side of the scalp in about three weeks Treatment had not been applied recently

The results of the general physical examination were negative. The urinalysis and the Kolmer-Wassermann and Kahn reactions of the blood did not reveal any abnormalities.

Over the entire left parietal region, extending forward over the temporal and backward to the occipital region, was a large, well defined, slightly erythematous lesion covered by heavy scales and crust (fig 6). There was less of the latter. The crust was yellowish and in places hemorrhagic, and its removal disclosed oozing and bleeding. Some of the hair had been cut, so that it was difficult to decide regarding alopecia. The hairs were closely matted together by the scales, and could be removed only with difficulty. The remainder of the scalp appeared



Fig 6 (case 2) —Left temporoparietal region

normal. Daily application of 5 per cent ammoniated mercury ointment resulted in prompt recovery.

Potassium hydroxide preparations of the scales showed abundant fungus-like elements similar to those found in case 1. Cultures on Pennsylvania medium showed only saprophytic fungi and various bacteria.

CASE 3—A girl, aged 15, presented two distinct conditions. The family history was unimportant. Six months previously she had been hospitalized for treatment for multiple lung abscesses from which she had entirely recovered. During the patient's sojourn in the hospital erythematous lesions developed on the lower part of the face and on the neck. The scalp was slightly scaly. A diagnosis of seborrheic dermatitis was made. The lesions involuted in a few days under treatment. Three weeks preceding her last admission, she noticed that she could

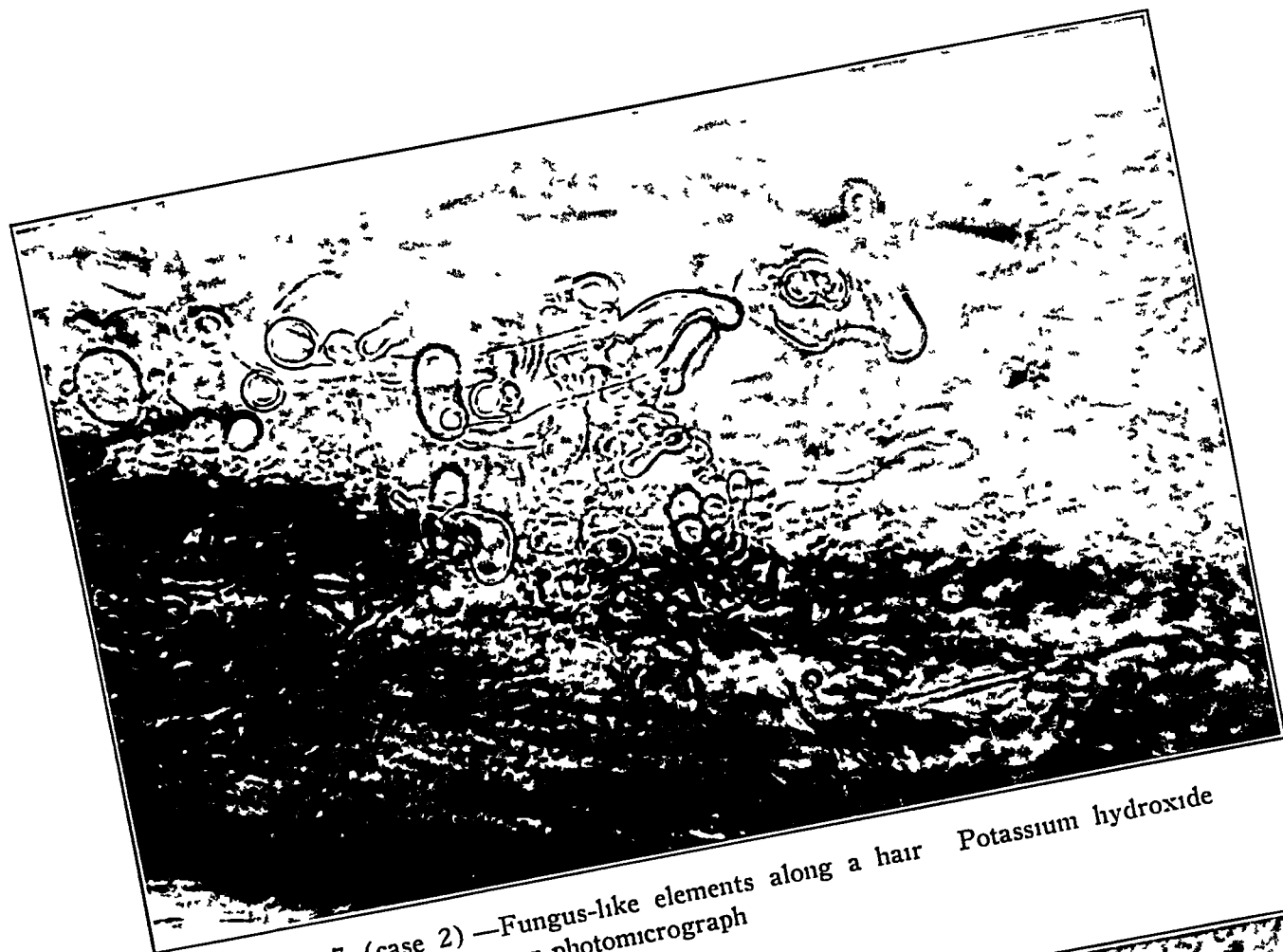


Fig 7 (case 2) —Fungus-like elements along a hair Potassium hydroxide preparation High power photomicrograph

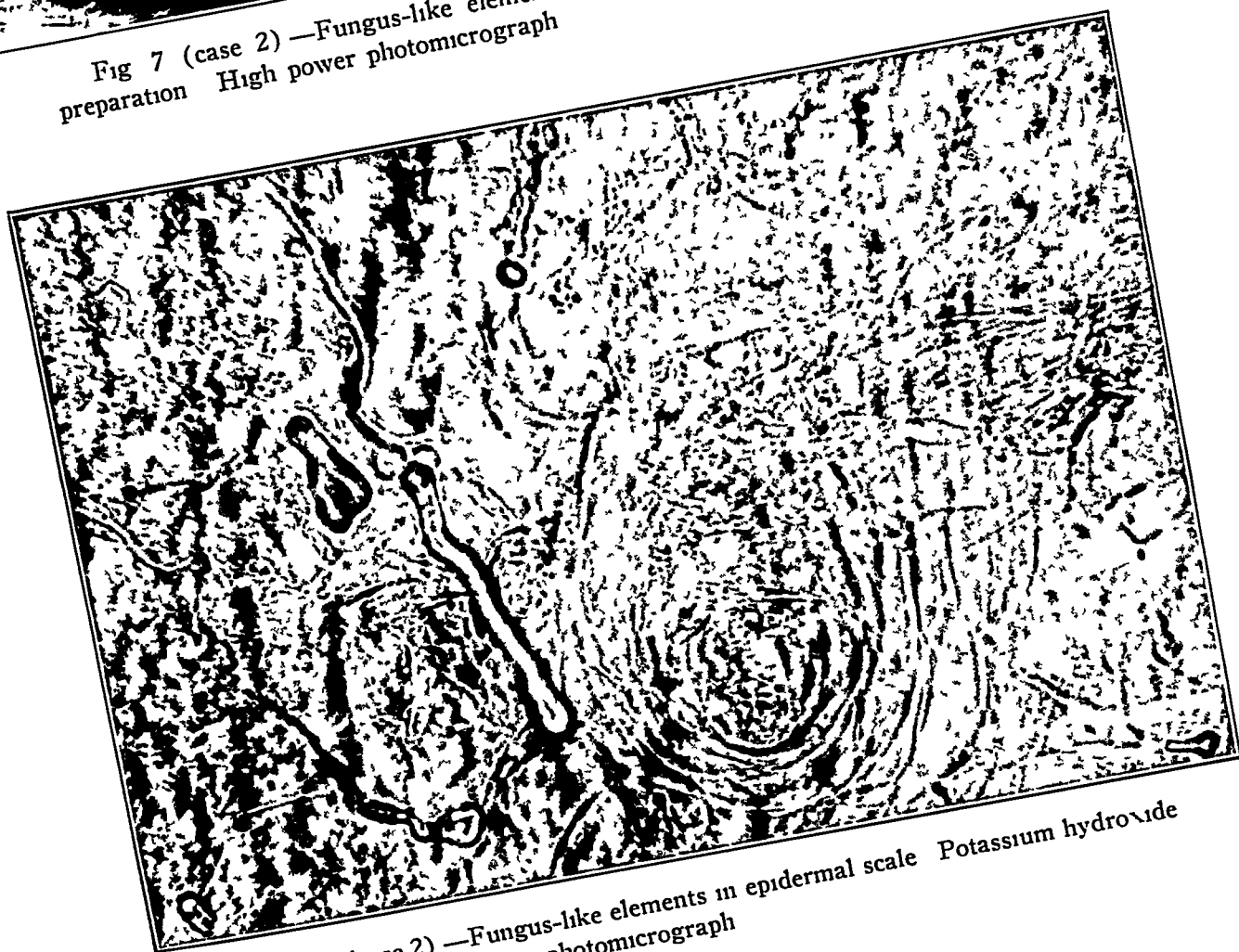


Fig 8 (case 2) —Fungus-like elements in epidermal scale Potassium hydroxide preparation High power photomicrograph

comb her hair only with difficulty, owing to heavy scales on the scalp. Subjective symptoms were not noted. Two weeks previous to her admission, she noted an erythematous squamous lesion on the inner surface of the upper part of the left arm about 1 cm in diameter. This was followed by many similar lesions on the arms, thighs and, to a less extent, the trunk, varying from 0.2 to 2 cm in diameter. Itching was slight, and burning was marked.

The results of the general physical examination were negative. Scattered over the arms, thighs and trunk were erythematous squamous lesions from 0.2 to 2 cm in diameter. The borders were markedly inflammatory, but vesicles could not be seen. A diagnosis of *tinea circinata* was made. On the vertex and anteriorly, the hair was bound together and to the scalp by an admixture of scale and crust, but with little of the latter. The scale extended onto the hairs for about 0.75 cm. Elevation of the scales revealed erythematous, slightly edematous epidermis, much less, however, than in cases 1 and 2.

Potassium hydroxide preparation of the scales from the lesions on the arm and the trunk showed many tortuous, branching hyphae. A culture was not made. Similar preparations of the scales from the scalp showed many fungus-like elements. They were arranged along some of the hairs in sheets (fig 7). Scattered through the epithelial scales were discrete groups of the elements, some of which were elongated and hyphae-like (fig 8). Culture on Pennsylvania and Benedek's mediums showed only staphylococci. (Benedek's medium is made up as follows: dextrose [Merck], 80, peptone [Merck], 20, agar, 20, and distilled water to 1,000.)

COMMENT

Tinea amiantacea is a distinct clinical entity. The asbestos-like scales binding the proximal portions of the hairs together are not found in ordinary inflammatory diseases of the scalp. The inflammatory condition of the epidermis, characterized clinically by erythema, edema and the formation of filiform processes, is unique. The histologic changes are those of a subacute inflammation. The flat scales are products of the surface epithelium and not of the follicular epithelium, hence, the condition cannot be classed with the folliculitides.

Little can be added to the etiologic considerations. The condition has been known to follow other dermatoses. In case 1, the patient presented, in addition, a questionable psoriasis of the nails. In case 3, the patient had recently had seborrheic dermatitis, and presented *tinea circinata*. Friedman's discovery of yeasts is suggestive. The etiologic relationship of yeasts to dermatoses was given recent consideration by White,³ White and Swartz,⁴ Benedek⁵ and others. We were able to find yeast-like bodies in the scales in all three cases. Further study⁶ showed that these were probably not living organisms, but possibly products of

3 White, Cleveland. Superficial Yeast Infections of Glabrous Skin, *Arch Dermat & Syph* **18** 429 (Sept.) 1928.

4 White, C. J., and Swartz, J. H. Cryptococcosis Epidermica, *Arch Dermat & Syph* **18** 692 (Nov.) 1928.

5 Benedek, T. Ueber Schizosaccharomykose (Aetiologie, Pathogenese, Klinik) *Arch f Dermat u Syph* **156** 184, 1928.

6 Becker, S. W., and Ritchie, E. B., unpublished material.

epidermal inflammation. Friedman did not illustrate or describe his observations in the scales sufficiently to enable us to decide whether they were similar to ours. In case 1, we were able to culture a cryptococcus from the scales, but could not reproduce the disease in the patient or in guinea-pigs by inoculation with pure cultures. Pathogenic fungi could not be cultured from the scales in cases 2 and 3. Friedman exercised caution in emphasizing the etiologic relation of the yeasts, stating that yeasts can be cultured from apparently normal epidermis.

SUMMARY

Three cases of tinea amiantacea have been presented, the first and third of the circumscribed type and the second tending toward the diffuse type. Case 3 was the dry, case 2 the moist and case 1 the intermediate type. Potassium hydroxide preparations revealed an abundance of fungus-like elements, which further study showed to be probably of nonfungous nature. Yeasts were cultured from the scales in case 1, and not from those in cases 2 and 3. Attempts at inoculation resulted negatively, both on the patient's scalp and on the skin of the guinea-pig. Histologic study revealed a subacute inflammation, with intense perifollicular edema in places. The condition yielded quickly to the daily application of 5 per cent ammoniated mercury ointment.

PORTRAITS OF ROBERT WILLAN *

JOHN E LANE, M D

NEW HAVEN, CONN

I became so interested in Willan's personality while searching for material for a sketch of his life that for a dozen years I did not entirely abandon the hope of discovering his portrait. An account of the unsuccessful period of the search has been given in the previously published account of his life.¹

That my search has been brought to a successful conclusion, and that I am now able to present copies of portraits of Robert Willan with some additional information about him, is due to the kindness and exertions of Dr Robert Joseph Willan, F R C S, of New Castle-upon-Tyne. I was not acquainted with him, but his name, his profession and the fact that he lives not far from Robert Willan's birthplace led me to appeal to him in the hope that he might be able and willing to assist me in my search. His response was most cordial.

He found that there is an oil painting of Willan at the Sedbergh School, where Willan had his early education, and that the portrait was given to the school in 1927 by Miss Mary E C Howell, of London, Willan's great granddaughter. He also found that the "Piece of Plate" presented to Willan on his retirement as physician to the Public Dispensary had been previously presented to the school by the late Miss Howell. He made a special journey to Sedbergh and obtained and sent to me a photograph of the painting and the permission to publish it. He obtained from Miss Howell and sent to me a copy of the inscription on the piece of plate,² and he found other smaller portraits of Willan in her possession. He also assisted me in communicating with Miss Howell and with Rev A J K Martyn, headmaster of the Sedbergh School, in my search for further information.

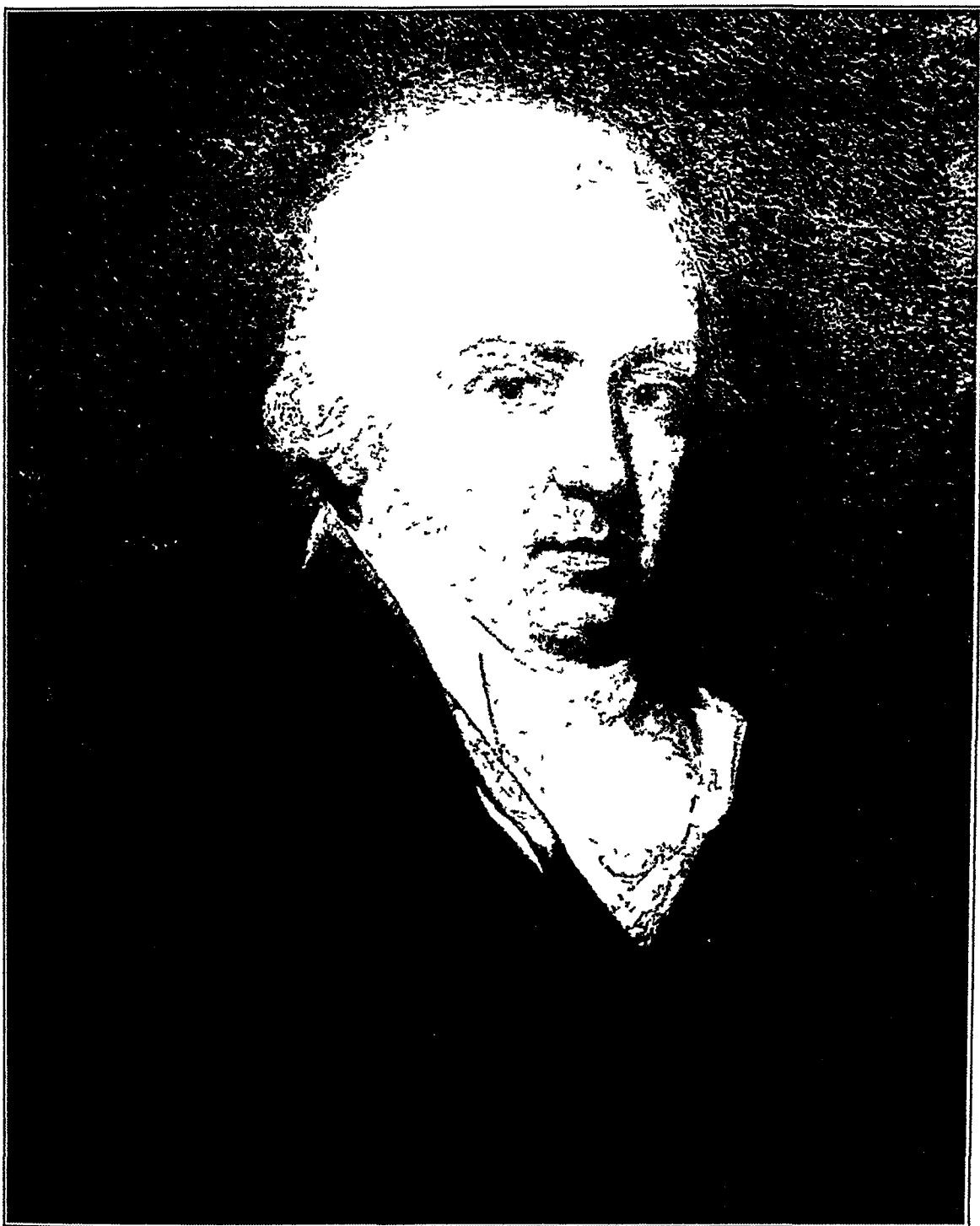
The Sedberghian, the Sedbergh School periodical, describes the portrait at the school as that of "a capable, resolute man in the prime of life, dressed in the high cravat and blue coat of the Regency," and says that "some interest in the picture has been aroused by alleged traces of Romney's brush."³

* Submitted for publication, March 22, 1929

1 Lane, J E. Robert Willan, Arch Dermat & Syph **13** 737 (June) 1926

2 The inscription on the piece of plate is as follows: Viro integerrimo artis scientiaeque suae peritissimo Robert Willan, M D, ob felicissimam operam in morbis egenorum civium sanandis Viginti annos amplius gratuito et strenue navatam aegrotantium apud Londinensis Pauperum Patroni Amico amici L L D, D D A D MDCCCIII, Societatis Praeside Comite sandvicense Collatae pecuniae custode Gulielmo Waddington

3 A Very Distinguished Old Serberghian, *The Sedberghian* **48** 120 (June) 1927



Robert Willan, from painting at the Sedbergh School, Sedbergh, England

"The Rev Mr Martyn *thinks* it more than possible that it was painted by Romney, for both Romney and Willan at some time lived in the neighboring town of Kendal in Westmoreland" ⁴

"Miss Howell furnished the following information in regard to Willan and his family, for which I had previously searched in vain

"Dr Willan was buried in Madeira, I *think* at Funchal—that is where they landed (after a tedious voyage of 53 days from Blackwall!) He gave particular directions a few days before his death that 'his remains should not be removed to England for interment' I have no proof of this but it is especially mentioned in a letter from Dr Ashby



Robert and Mary Willan, from the miniatures in the possession of Miss Mary E C Howell, London

Smith to Dr. Willan's brother Richard, written on April 14 to announce the death having taken place on April 7 and adding 'the funeral is intended to take place tomorrow' Dr Willan married Mary, widow of Dr Scott, her maiden name 'De Beaufre' Their only child *Richard Willan*, my grandfather, had one only son *Robert* who died a bachelor in 1902 I am the only descendant of Dr Willan, my mother having been *Mary*, sister of *Robert*, whose other three sisters left no descendants, so far as I know I have no Willan relations even in a remote degree

⁴ Willan, R J Personal communication to the author, Nov 26, 1928



Robert Willan, from the painting in the possession of Miss Mary E C Howell,
London

"It may interest you to know that Dr Ashby Smith married Mary Scott, one of Mrs Willan's daughters by her first husband, the other sister died unmarried, and there are no descendants of the Ashby Smiths

"The Fothergill medal was, alas, stolen years ago Mrs Willan survived her husband some years and their son died in 1847"⁵

"There is a monument in memory of Willan, probably erected by his widow, in the church yard at Hillington, Middlesex"⁶

The Sedbergh School Register says of Willan "He was a model of the perfect human character, the best and noblest of mankind"⁷ The author of these entries is unknown

NOTE—Miss Howell has presented to the Royal College of Physicians two letters from Robert Willan to his brother Before doing so, she sent them to me, and I have presented a photostatic copy of each to the Library of the New York Academy of Medicine and to the Yale University Library

To Dr Robert Joseph Willan I express my thanks for his careful and time-consuming search, to Miss Howell, for photographs of the painting and of the miniatures of Willan and his wife still in her possession, for permission to reproduce them and for her kindness in furnishing interesting information in regard to Willan, to Rev Mr Martyn, for information furnished me through Dr Willan, for permission to reproduce the portrait in possession of the school and for local photographs of interest

5 Howell, M E C Personal communication to the author, Jan 9, 1929

6 Howell, M E C Personal communication to the author, Jan 31, 1929

7 The Sedbergh School Register, 1546-1895, Leeds, Richard Jackson, p 156

THE CHLORIDE CONTENT OF THE WHOLE BLOOD IN ECZEMA *

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In view of recent writings indicating the possibility of disturbed chloride metabolism in eczema, it was decided to investigate the chloride content of the whole blood in cases included in this group and also in certain other diseases of the skin

REVIEW OF LITERATURE

Herrick,¹ in 1924, showed that there is an inverse relationship between the concentration of dextrose and chlorides in the blood after the ingestion of 100 Gm of dextrose, and suggested that the chlorides possess the property of shifting to other tissues from the blood in order to preserve the optimal osmotic conditions of the blood

Barney,² in 1926, made chemical analyses of the sweat in eczema and demonstrated that in these cases there is a diminution in the output of chlorides in the sweat. He concluded that the salts may play an etiologic rôle in the production of the eczematous condition

In the same year Throne, Van Dyck, Marples and Myers³ reported cases of eczema in which the patients were treated with intravenous injections of sodium thiosulphate, and in which observations of the blood chlorides and blood sugar were made before and during the course of the treatment. These authors stated the belief that normally there is a distinct balance between the chlorides and carbohydrate contents of the blood and tissues, and that this balance is disturbed in eczema. They concluded from their investigations that in their series of cases of eczema there was an involvement of the carbohydrate and chloride content of the blood, and that these substances were probably deposited in the cutaneous layers. They also concluded that the vesicular, weeping condition is associated with a raised chloride content and the pruritus with a raised carbohydrate content

* Submitted for publication, Jan 7, 1929

* From the Research Institute of Cutaneous Medicine and the Graduate Hospital, University of Pennsylvania, Jay F. Schamberg, M D, Director

1 Herrick, W W. The Reciprocal Relationship of Chlorides and Dextrose in the Blood, *J Lab & Clin Med* 9 458, 1924

2 Barney, R E. Chemical Analysis of Sweat, *J A M A* 87 1827 (Nov 27) 1926

3 Throne, V. Van Dyck, L S, Marples, E, and Myers, C N. The Treatment of Eczema with Sodium Thiosulphate, *Urol & Cutan Rev* 30.530, 1926

They stated that when the blood chlorides reached 500 mg of sodium chloride per hundred cubic centimeters after having previously fallen below this figure, there was an exacerbation of symptoms. Unfortunately, they did not state what they consider to be a normal figure for the blood chlorides, nor did they give any figures for normal controls. Since Myers ⁴ gave from 450 to 500 mg of sodium chloride per hundred cubic centimeters as rough normal figures for the chloride content of whole blood and quoted lower figures as within normal limits, it would appear, from the tables of results obtained in six cases published by them, that their figures fell within normal limits, and that the effect of administration of sodium thiosulphate was not by any means constant.

Davidson ⁵ found a lowering of the whole blood and plasma chlorides in persons suffering from cutaneous burns. This change could not be entirely explained by alteration of the renal threshold, diet, fever, exudation, blood concentration or vomiting. He showed that the disturbance of chloride metabolism was proportional to the area of tissue devitalized.

Myers ⁴ stated that high blood chlorides have been found in nephritis, certain cardiac conditions, anemia and in some cases of a malignant condition. If the contention of Throne and his co-workers is correct, one would expect to find an unusually high incidence of vesicular, weeping eczema in these conditions, which is not the case.

METHOD AND RESULTS

In this work, the chloride content of the whole blood was estimated by the method of Whitehorn ⁶. The blood chlorides were estimated in normal persons and in persons suffering from acne, generalized pruritus and pemphigus, as well as in patients suffering from eczema.

As a preliminary measure to check up the technic employed, the chloride content of the blood was estimated in a series of normal persons. Table 1 shows that the figures obtained correspond closely with those given by Myers in the book to which reference has already been made.

In table 2 are shown the blood chlorides in cases of acne and pruritus and in one case of pemphigus, and it will be seen that in these cases there is no departure from the normal chloride content of the blood.

4 Myers, V. C. *Practical Chemical Analysis of Blood*, St. Louis, C. V. Mosby Company, 1921.

5 Davidson, E. C. *Sodium Chloride Metabolism in Cutaneous Burns and Its Possible Significance for a Rational Therapy*, *Arch Surg* **13** 262 (Aug) 1926.

6 Whitehorn, J. C. *Simplified Method for the determination of chlorides in Blood or Plasma*, *J Biol Chem* **45** 449, 1920-1921.

Finally, the results of estimation of the blood chlorides in cases of eczema are listed in table 3. As the clinical notes included in the table show, the cases included acute and chronic, oozing and dry, varieties of the disorder. One case of infantile eczema was also investigated. An

TABLE 1—*Blood Chlorides in Normal Persons*

No	Name	Sex	Age in Years	Chlorides as Sodium Chloride, Mg per 100 Cc
1	A. P.	M	28	430
2	S. L.	F	46	449
3	C. B.	M	33	446
4	M. R.	M	27	429
5	N. B.	M	25	462

TABLE 2—*Blood Chlorides in Persons with Various Dermatoses*

No	Name	Sex	Diagnosis	Chlorides as Sodium Chloride, Mg per 100 Cc
1	R. B.	M	Acne	460
2	M. G.	M	Acne	480
3	P. K.	M	Acne	492
4	M. H.	F	Acne	468
5	N. S.	M	Pemphigus	432
6	G. O.	M	Severe pruritus	429
7	H. Z.	M	Pruritus hiemalis	449
8	F. I.	F	Pruritus	418
9	H. W.	F	Pruritus ani	452
10	A. S.	M	Pruritus	454

TABLE 3—*Blood Chlorides in Cases of Eczema*

No	Name	Sex	Clinical Notes	Chlorides as Sodium Chloride, Mg per 100 Cc
1	B. B.	M	Generalized weeping eczema	442
2	L. T.	M	Generalized acute eczema	450
3	A. H.	M	Generalized acute eczema	449
4	J. C.	M	Acute exacerbation of chronic eczema	495
5	H. B.	M	Chronic eczema	447
6	A. O.	F	Oozing, crusted, chronic eczema	429
7	F. B.	F	Chronic papulovesicular eczema	444
8	H. R.	M	Extensive dry acute eczema	475
9	T. H.	F	Chronic eczema	487
10	A. J.	F	Acute eczema of arms	465
11	B. S.	M	Chronic eczema of hands and ankle	487
12	E. B.	M	Chronic eczema of ankle	426
13	R. I.	F	Nummular oozing eczema	487
14	H. P.	M	Eczema of hands and groin, much oozing	472
15	R. S.	F	Eczema of face and neck	493
16	M. M.	F	Eczema	482
17	M. W.	M	Chronic vesicular eczema	469
18	E. S.	M	Eczema of lips, face and wrists	432
19	T. N.	M	Infantile eczema	475
20	L. S.	M	Eczema of arms, hands and feet	495

examination of the table indicates that in all varieties of eczema examined in this series the blood chlorides were within normal limits, and high or low values could not be correlated with any clinical classification.

It is clear that these observations do not demonstrate any abnormality of chloride metabolism, either in cases of eczema or in the other cases investigated in this series

In view of the observations, there would appear to be no indication for attempting to reduce the chloride content of the tissues either by giving a salt-free diet or by aiding the elimination of chlorides from the body in such cases

Any satisfactory results obtained by the intravenous administration of sodium thiosulphate in treatment of patients with eczema would appear to depend on some factor other than the alteration of the chloride content of the blood

CONCLUSIONS

1 The chloride content of the whole blood was estimated in a series of cases of eczema, as well as in normal persons and in persons suffering from other skin diseases

2 The blood chlorides in eczema of all types, including infantile eczema, as well as in cases of acne, pruritus and pemphigus, were within normal limits

3 In view of these observations, there would appear to be no indication for attempting to reduce the chloride content of the blood in the treatment of patients with these diseases

SEBASTIAN BRANT DE PESTILENTIALI SCORRA SIVE IMPETIGINE ANNI XCVI *

THE HONORABLE WILLIAM RENWICK RIDDELL, LL.D., D.C.L.
President, The Canadian Social Hygiene Council
TORONTO, CANADA

In the late days of the fifteenth century, the Holy Roman Empire¹ was all unwittingly nearing its end, the bark of State, for long fighting adverse wind and wave, was struggling amidst stormy seas, assailed by tempests from every quarter

The Holy Roman Empire, of which it has been bitterly but truly said that it was not holy, it was not Roman, and it was not an empire, was a living thing for many years after Otto II (Otto the Great), its founder, was crowned in Rome in A.D. 962, it never, indeed, achieved its ideal, but the German King and the Roman Emperor met in one person, who was crowned at Rome, and who was, in effect, selected by the Roman Pontiff. The ideal, half poetry and half theology,² was that the whole Christian world was one great Empire, over which presided the Pope in ecclesiastical and the Emperor in secular matters. Even while the supremacy, absolute or qualified, of the Pope was admitted, that of the Emperor was indignantly repudiated by much of Christianity. France, Spain, Denmark and other countries refused from the first to acknowledge the sway of the Emperor, in England, the Imperium of the King of England in his own domains was asserted by Statute of Parliament.³ Italy and Burgundy freed themselves, Italy knew no German as Emperor after Frederick II, Switzerland revolted against intolerable tyranny, and after many heart-breaking reverses, at length, in 1477, secured its national existence by defeating Charles the Bold. Hungary

* Submitted for publication, Jan 7, 1929

1 No one now ventures to write anything concerning the Holy Roman Empire without consulting the classic work of James (Lord) Bryce. What follows is contained in that work, either expressly or by implication. As is well known, many count the beginning of this so-called Empire from the crowning of the Frank, Charles the Great, better known as Charlemagne, by the Pope in A.D. 800, when he was given the title of Emperor. His successors, the heads of the Holy Roman Empire or German Empire, continued the pretensions until its extinction in 1806.

2 The language of Lord Bryce

3 The English Statute of 1533, 25 Henry VIII, cap 22, in the preamble, speaks of the "Titles pretended to the Imperial Crown of" the realm "contrary to the Right Legality of the Succession and Posterity of the lawful Kings and Emperors of this realm," and states that "the Bishop of Rome and See Apostolick hath presumed in Times past to invest who should please them in other men's Kingdoms and Dominions, which Thing your Subjects do utterly abhor and detest." Then in sec 7, it is enacted that "the said Imperial Crown shall be to your Majesty and to your Heirs of your body."

and Poland had each its monarch who did not acknowledge the overlordship of the "Imperator serenissimus Augustus, Pius, Felix, Romanorum gubernans Imperium," the "Germaniae Rex" or "König in Germanien und Jerusalem"

The last Emperor to be crowned at Rome was Frederick III. On his death, the Pope selected Frederick's son Maximilian to be Emperor, probably because he was the strongest of the German princes, but the Venetians, who did not acknowledge his sway, refused to allow him to pass through Rome to be crowned, and he must needs be content with symbolic and substitutional ceremonies.

Maximilian was a man of considerable ability, of more persistency, and of still more ambition. He refused to admit the independence of the gallant Swiss until forced so to do in 1500, he was set on recovering Burgundy and Italy, and on reviving the ancient glories of the Empire.

He came to the throne in 1493, and it is one of the deep ironies of history that he who was definitely committed to the renewal of the Roman Empire was destined to be the main agent in replacing it by the Empire of the Hapsburgs,⁴ the Roman Empire disappearing and the Austrian Empire taking its place with much of its presumption and more of its pride.

An enemy of Maximilian and an opposer of his pretensions was Charles the Eighth of France. He invaded Naples in 1494 and possessed himself of the kingdom, but retired precipitately before the League of Pope and Emperor. Before this retreat, there had broken out in his army a strange disease, which proved itself to be the greatest curse with which suffering humanity has ever been afflicted. Hieronymus Fracastorius,⁵ who gave it its name, Syphilis, from the mythical Syphilus, a shepherd whose blasphemy had caused the celestial powers to send it on mankind, said that the Italians called the new disease *morbus gallicus*, the French, *morbus neapolitanicus*. This was, of course on the same principle that the Americans called the "cold plague" of the war of 1812 the "Canada plague", that one still speaks of "Spanish 'flu'" and "German measles", that the Russians call influenza "Chinese catarrh," the Germans, "Russian pest," and the French, "Italian fever" or "Spanish catarrh," and that, in Jackson's time, the other party called influenza "Jackson's itch" and his own party retaliated by calling it "Tyler's grip."⁶ Fracastorius goes on to say that the

4 Of course, Maximilian was not the original founder of the Hapsburg Line and the Austrian Empire, but it is certain that this would never have had the prominence which it achieved but for Maximilian and his grandson, Charles the Fifth.

5 Fracastorius, Hieronymus. *De Contagionibus, Morbisque Contagiosis et eorum Curatione*, book 2, chap. 11. Riddell, W. R. *Fracastorius' Works on Syphilis*, Toronto: Canadian Social Hygiene Council, 1928.

6 Riddell, W. R. "The 'Cold Plague' of the War of 1812-14," *Lancet* 1: 512 (March 11) 1922.

Spanish called the new disease *Patuisa*, the Germans, *Mevius* or *Gallicus* and some, *Pudendagra*. It has since been called by many names, so that Iwan Block⁷ filled some eighteen pages with the names simply. It was not till 1527 that the name venereal disease was given to it in Jacques de Bethencourt's "New Penitential Lent," and this has, at least in scientific circles, given way to the name invented by *Fiacastorius* and given to the world in 1530 in his celebrated poem published in that year at Verona, the world-famed "*Syphilidis sive de Morbo Gallico libri tres*"

One of the names was "*Scoira*," with or without the adjectival "*pestilentialis*". *Scoira* is said to be derived from the Greek *σκάω*, genitive *σκατός* ("skor," genitive "skatos") meaning feces, and this may be true, but the root form "skat" is what is and should be employed in derivatives from this Greek source. There is rather a suspicion that the word has some connection with "*scoita*," as designating the class of "lady" with which the disease is generally associated and which contributed no little to its spread.

Be that as it may, the ravages of the new disease became at once alarming, as early as 1497 syphilitic persons were driven from Paris and threatened with death if they refused to go. Physicians refused, sometimes were forbidden, to treat persons with the disease, and hundreds of the victims died on the roadside or in forests. Historians, as a rule, either pass over this terrible scourge altogether or treat its appearance and effects very casually, but the horror of it is appalling.

Then, as in all such afflictions, many good men attributed the scourge to the wrath of God, taking vengeance for the disregard of His precepts by some of His creatures through a destroying angel visiting them and others wholly innocent.

Nor was such an interpreter of the will of God and His vengeance wanting to improve the occasion. Sebastian Brant (or Brandt, as he sometimes wrote it, just as our Canadian Joseph Brant was once Brandt), born at Strassburg in 1448, and educated at Basle and in his native city, at the latter graduating Doctor of Laws in 1489, was an elegant Latin scholar and wrote creditable poetry in this language. He also wrote works on law and had, at least, some success in this direction—lawyers were not forbidden to be scholars or to broaden their lines of study. These are now forgotten, and Brant is known only by his celebrated satire "*Das Narrenschiff*," "*The Ship of Fools*," published for the first time in 1494, but frequently reprinted, it has been translated into Latin—not bad Latin, either—and several modern languages, Alexander Barclay's "*Ship of Fools*" (1509) is rather an imitation (in some parts approaching parody) than a translation of Brant's work. Brant was one of the three great writers of the Renaissance, Erasmus and Vives completing the Triad.

⁷ Block, Iwan. *Der Ursprung der Syphilis*, Jena, 1901, p. 297.

In 1498 was published at Olpe,⁸ a small German town, a duodecimo volume of Brant's poems, in which is included the poem that is the subject of this article, it seems to have escaped to a certain extent the observation of syphilographers, and is not in the ponderous tomes of Aloysius Lusiinus' "Aphrodisiacus sive de Lue Venerea" (Leyden, 1728), one of the best, if not the best of the collections of such works. I owe a photostatic copy of the original in the Yale University library to the kindness of Dr J E Lane, of New Haven, Conn, and venture to present a translation to the medical world or such part thereof as take an interest in the history of their profession and of the diseases which it has been their duty to meet and in a measure to subdue.

This edition was mentioned by Proksch, but he seemed ignorant of the sumptuous Strassburg edition (quarto) published in 1498 by Gruninger, of which Haeser⁹ speaks so enthusiastically.

The plain object of the poem is not so much to describe the disease as to make its occurrence the pretext of a solemn adjuration of the subjects of Maximilian to be obedient to their Emperor and to assist him in his ambitious schemes for the aggrandizement of his Empire and of himself. The time for a real Roman Empire was gone, freedom was in the air—it will be seen that Brant complained in the poem that everybody wished to be his own ruler—America had been discovered and the old mystery of the limits of the world had gone, the Renaissance had opened the mind and the soul to new views of humanity and humanity's destiny, the Eastern Roman Empire had disappeared, and a new and foreign, disturbing element entered Europe, the right of private judgment was being asserted against authority in the state, and Luther was just below the horizon. The real German feeling was manifesting itself: the Germans were Teutons and not Romans, nor were they willing to waste men and material in an attempt to glorify and magnify a Roman Empire and a Roman Emperor, "Deutschland uber Alles" was not, indeed, sung, but it was tacit in the mind—and what a Deutscher will do for Deutschland the whole world knows, and all but a few honor him for it. Brant's task was to combat this feeling for personal freedom of act and thought, to induce the German to bow before the Emperor as Roman Emperor and assist him in his ambitious schemes, but it was too late, Maximilian failed to reestablish a Roman Empire, and modern Europe is the result.

⁸ Olpe was and is a small Prussian town in the Province of Westphalia.

⁹ Haeser Handbuch III, p 239. Neither of these editions of Brant's poem finds a place in the enumeration of the publication of the works of Sebastian (or Titio) Brant in the ponderous four volumes of the Bibliotheca Britannica, and, indeed, it may fairly be said that all other works by Brant are lost sight of in the glory of his inimitable "Ship of Fools." Notwithstanding the apparent neglect of this poem, it is not too much to say that it is of particular importance in the history of medicine, as it contains the earliest extant account of syphilis, or at least one of the earliest.

The language of the poem, as was to be expected of so accomplished a scholar, is pure, lucid and effective. The elegiac form of verse adopted is perhaps less facile than Fracastorius' hexameter, but great success has been achieved—and, after all is said, the elegiac is an admirable medium for such a message.

In the hexameter rises the fountain's silvery column
In the pentameter, aye, falling in melody back

The quality is unexceptionable, and I have noticed only one deviation from the best classic idiom, i.e., the use of the passive of "ludere" as an impersonal.

Allusions to Holy Scripture, in the Vulgate, are not uncommon, while Ovid and Vergil are not obscurely indicated. In short, the language and allusions are precisely what one might expect from a thoroughly educated man of his period.

The typography is what was usual at the time, the type-founder thought he should imitate as closely as possible the crabbed hand of the scribe, and the printer followed suit by imitating the contractions and little tricks of his predecessor. The punctuation is erratic, but, as was usual, one finds a colon not uncommonly where now would be employed a comma, and full stops did not always mean what they indicated. But no one accustomed to read the old Blackletter Year Books or any medieval print need have much difficulty. He will know that "q" with a tail means "que," and will remember that "m" with a dash over it may mean several things, and consequently will know that what may be "domum" may also be "dominum", he will also remember that the termination "ae" now always used in the genitive and dative singular of nouns of the first declension was then usually printed (and written) "e," with or without a tail like a modern cedilla. There are no traps, however, for the vigilant reader, no new or extraordinary snare to avoid, they are all common to such literature.

In the copy of part of the text which I subjoin, I remove the peculiarities for the most part, and then those who confine their reading to modern printed texts will, I think, find no difficulty in construing it. I have added a few notes to assist in the understanding of the text.

The text being without interest in itself to any but a latinist or one who studies medieval methods of expression, I shall content myself with copying here the title page and the first and last pages of the book.

THE TITLE PAGE OF THE BOOK

VARIA SEBASTIANI BRANDT CARMINA

(Three cuts, one representing St Sebastian tied to a tree and pierced by an arrow, another representing the Adoration of the Magi, and the third, equal in

height and double the breadth of the other two, and placed at their left, representing a robed man, probably Eli, praying¹⁰)

Quae tibi dūa miser christipara/¹¹ carmina lusi
 Coelicolisque aliis suscipe grata velim
 Et mihi pro reliquis erratibus optima virgo
 Exores veniam criminibusque precor
 Nam pro laude tui nati / superique tonantis
 Cuncta hec concinui que liber iste tenet

1498

NIHIL SINE CAUSA

Olpe

VARIOUS POEMS BY SEBASTIAN BRANT

O divine Mother of Christ, what Odes, I, poor wretch, have in light mood composed in honor of thee and the other celestials, I would thou shouldst receive graciously And, O thou best of Virgins, gain by thy prayers my pardon for my other errors I pray for my sins—for it is in honor of Him born of Thee and Him who thunders on high, that I have sung all that this poor book contains

1498

NOTHING EXISTS WITHOUT CAUSE

Olpe

(FIRST AND LAST PAGES OF THE LATIN TEXT, MODERNISED)

Ad Ornatissimum Imperialium legum interpretem Iohannem Reuchli al's Capnion
 omnis litterarie tam grece / atque Latine que Hebraice professorem acutissimum
 de pestilentiali scorra / sive Impetigine Anni XCVI Elogium S Brant

Capnion illustres inter memorande poetas
 Germani specimen / nobilitasque soli
 Fare age (nam meminī tibi lyncea lumina) quo nam
 Iam modo terrarum / forma / statusque placet
 Cernis vt in toto / variisque tumultibus / orbe
 Sit Bellona ferox irrequieta nimis
 Atque pilam multis iam luditur vltro¹² citroque
 Queritur in scirpo (scis puto) nodus iners
 Nec sat scire licet cui sit cessura vel olim
 Herba velit quo nam sistere sine globus
 Imperio paucos iam cernimus esse fideles
 Vix modo / Germanis cesarem habere / placet

10 In the Gruninger Quarto of 1498, there are six handsome figures three of them are half page, representing the poet kneeling, a carriage with two fools and the Emperor Maximilian with a flag The other three are as in this edition

11 This mark (/) is a common form of punctuation Its meaning is not always easy to detect, as it is used for the shortest as well as longer pauses, sometimes, indeed, where one would think any mark improper

12 The indiscriminate use of the letters "u" and "v," as of "i" and "j," in these early publications is well known

Pro se quisque studet ceco¹³ regnare tumultu
 Detractatque suum gens modo quaeque jugum
 Aetas nulla prius neque secula cuncta tulere
 Tot modo quot passim cernimus acephalos

(Last page)

Alea iacta quidem est pernix Rhamnusia ludit
 Atque indignatur nos voluisse minus
 Nolite, O Virtus Germana / & vinida corda
 Desipere atque alius linquere frenu / & opes
 Est aliquid membris caput orbis habere monarcham
 Quem timeant gentes regnaque cuncta soli
 Qualis magnanimus victor modo Maximilianus
 Qui fulmen belli est pacis amator item
 Principis illius mallem iacuisse profecto
 Sub pede quam externi sceptris tulisse viri
 Simus, lo cives capiti rogo subdita membra
 Sic patrius nobis manserit vsque decor
 Egregias animas proavorum vmbrasque sequamur
 Maiorum (neque enī degenerare licet)
 Qui virtute sua sudore / armisque pararunt
 Fortibus / imperium sceptrigeram manum
 Sic Germanus deus regna atque deifera mater
 Perpetuo obseruent Teutonicumque decus

To the most distinguished interpreter of the laws of the Empire, John Reuchlin, otherwise Capnion,¹⁴ the most acute professor of all literature, Greek as well as Latin and Hebrew—of the Pestilential Scorra, or Impetigo of the year, '96, a Poem, S Brant

Capnion, ever to be remembered among illustrious poets, glory and honor of German soil, say—for I remember thy lynx-eyes—to whom is

13 One vowel is often dropped indiscriminately in the diphthongs "oe," "ae," etc

14 Johann Reuchlin (1455-1522) was one of the wonders of his time in respect to erudition. He sometimes called himself Phorcensis, i e, a native of Pforzheim (in the Black Forest), while many of his contemporaries, especially in Italy, called him Capnion, after the manner of the learned of the day, who Latinized or Grecized names, making Gerard, Erasmus and Schwartzerd, Melanchthon, so they made Reuchlin (Rauchlin) Capnion, the "smoky one" (from "kapnos," smoke, Greek, "Rauch" being "smoke" in German). Not too much praise is given to his learning and acumen in "lynx-eyes." The reference to the laws of the Empire looks to the establishment about this time of a Court of Appeal for the whole Roman Empire, in which were applied the laws as set out in Justinian's Institutes and Pandects, this Roman law, commonly called the Civil Law, is still the basis of the law of central Europe, just as the English Common Law is the basis of ours. It will be remembered that the clerical element of Parliament tried to introduce into England this Civil Law, but the laity would have none of it, in the Statute of Merton, 1235, 20 Henry III, cap 8, one reads, "Et omnes Comites & Barones una voce responderunt quod nolunt leges Angliae mutare, que usitate sunt & approbate," i e, "And all the earls and barons with one voice answered that they would not change the laws of England, which have hitherto been used and approved."

the state and condition of the world now at all pleasing? Thou seest how fierce Bellona¹⁵ is raging, all too unresting throughout the whole earth and in varied uprisings And now the ball is being played by many, on this side and on that Nor can one know sufficiently to whom the herbage is to fail as of old,¹⁶ who yearns for the Globe now at length to be at peace

We see that, now, few are loyal to the Empire hardly does it seem that the Germans desire an Emperor at all, everyone tries to rule for himself, and resists his own folk and every kind of control No former age—nor all former ages—suffered so many without a Head as now we see everywhere

To the Frogs,¹⁷ the gentle sway of the Thunderer was not pleasing—a king is given them, in punishment, the all-devouring Ibis—to them, the foolish ones, who desired a new king to the doves is given a king, the Hawk, monstrous and voracious Greece, in ruins, wishing to shake off the Roman reins, bears the yoke of a malign master, and she who withdrew her loyalty from her Head, now, alas, endures a Head and a master more severe¹⁸

O best of the Phorcus-born,¹⁹ most justly the care of the gods (for thou tillest the blessed land of the daughters of Pegasus²⁰)

15 Bellona was the Roman goddess of war, war was raging and many were throwing the ball—"luditur"

16 The reference is to Jeremiah 14 6, "their eyes did fail, because there was no grass"

17 In the old fable, the Frogs were discontented with their King Log, and in punishment were given King Stork, or, as Brant has it, King Ibis, who devoured them and their children

18 Greece, which lost its freedom and became part of the old Roman Empire when, in B C 146, Corinth was taken by the Consul Mummius, never was patient of the Roman yoke, whether before or after the division into Eastern and Western Empires Becoming part of the Eastern Empire, Greece fell with it into the power of the Turk, "a head and master more severe," between A D 1460 and 1473 Unfortunately, she found her new master most "malign," and it was not till the nineteenth century that she succeeded after many struggles in shaking off his yoke

19 Phorcus, Phorcys or Phorcyn was the "old man of the sea" of Greek folklore He was the father of the Graeae, the Gorgons and the Hesperides The Graeae, described as old women, gray from birth, were sometimes taken as representative, and not far from being the all-mutter of all the "Graiōi," Greek folk, the best of whom were inhabitants—so they said, at least—of European Greece See following note

20 "Pegasidum," of the Pegasides, the daughters of Pegasus, this name is given by Ovid (*Halaeuticon*, 15, 27) and by Propertius (3[4], 1, 19) to the Muses, although they were not his children according to the mythology Some of the medieval and some of the modern writers make more of Pegasus, the winged horse, the stroke of whose hoof brought into existence the famous fountain of Hippocrene, than is at all justified by the ancient story Ovid in another passage (*Tristia*, 3, 7, 15) calls the spring of Hippocrene "Pegasides undae" However, there is no difficulty in understanding the poet here—he is simply saying that the European Greeks the best of the Greek stock, were guardians of the Pierian spring and occupied the land of the Muses

I will openly acknowledge that amongst the many things I do not know, this one thing I claim that I know and know intimately the Germans are struggling, straining every nerve toward the end that they may destroy the Head which themselves produced

Since the end is at hand, it is natural that justice should cease the non-equine herd takes away the horse-grass ²¹ from the horses Thus was the sceptre taken from the Assyrians, thus from the Medes, thus, too, from the Persians, and the Macedonian mighty rule lies prostrate

And it is to this end that the avenging god now sends on the lands so many terrible diseases and every kind of fever, so many new monsters, fierce and portentous, horrible signs and death manifold and hateful

Who, indeed, fears not that horrendous and death-bearing syphilis, which has lasted seven years, or at least, a lustrum ²²? I add other new diseases, increasing daily and hourly, as to which I would fain be silent

These are the darts of the gods, by whom is consecrate the deadly plague and the wicked are punished and brought low We say that for that purpose the thunderbolts, fabricated by the hands of the Cyclops, are in the hand of angry Jove, with which, from the beginning of the world, he has held the nations in check, and taught man to live and be as gods

21 Hippuris is the Greek equivalent of the Latin "equisetum" and the English "horse-tail" Pliny (*Naturalis Historiae*, book 26, 13, 83 [132]) gave some interesting information about it, as reliable as much that he tells Much detested in the meadows, where it interferes with more valuable grasses, it will, when decocted in an earthen vessel down to a third of the vessel's capacity, help the spleen of runners, if half a pint is drunk Marcellus said that those suffering with the spleen are much benefited by hippuris taken in dry wine or oxymel Pliny said there was no consensus of opinion about this grass but the juice put up the nose would check nasal hemorrhage, and had the same effect ad alvum, that, moreover, taken in sweet wine, it cured dysentery, that it was uretic, cured cough and dyspnea, checked enterocele, and had the qualities of a blood-styptic, along with other valuable (?) qualities What is here complained of is the depriving of the horse of his perquisite, a metaphor for the withdrawal of due obedience from rightful rulers

22 In Rome, the lustrum was generally five years, and remembering that the first anyone heard of syphilis was in 1494, one perceives that it was not far from a lustrum in 1498 That the author could describe this epidemic of syphilis as "the impetigo of the year 96" speaks volumes for the rapidity of its course through Europe Fracastorius in his prose work (mentioned in the Poem, book 2, chap 12) said, "It is established that it was seen at the same time, or about the same time, in Spain and France and Italy and Germany and almost all Scythia" (i.e., Russia and Poland), and he thought "it would be impossible in so short a time for a contagion which is so sluggish in its nature and is not readily caught to have traversed so much territory" It must be borne in mind, however, that Fracastorius was ignorant of the primary infection, and looked on the secondary stage as the beginning of the disease, this accounts for his idea that the "contagion" was "sluggish in its nature" In this connection, my edition (footnote 5, p 11) may be seen In his poem, book I, Fracastorius told of the rapid progress, or rather simultaneous appearance, of the plague in many lands

To keep silence concerning them individually (the long list of them fatigues me), this one it will be enough to speak of—in what way that pestilential disease (which I detest even so much as to mention), so dire and horrendous and vile (I pray the gods forbend!), France carried over to the Ligurians, and which the Roman tongue calls “Mala de Franzos”

This disease invaded Latium and the Italians, creeping abroad from the Alps, it afflicts the Germans and those of Istria. It rages, now, among the Thracians and the Bohemians. Every Sarmatian dreads this kind of sickness, nor are the British sufficiently secure, whom surrounds the ebbing and flowing strait. It is said to have penetrated even to the Africans and those of Geta, and with its venom to be depopulating either Pole. Much exceeding the usual, this evil is seen to be growing everywhere, and of our own folk, many are the bodies which are suffering punishment.

Thou, O Frenchman, callest it “Scorra” from “Skor,” which is the name the Greek gives to excrement—the very word is vile and rank!

This might be called “Thymus”²³ were the wart to bleed when it is broken, but it sits dry. Condyloma is produced or gangrene, then in these, the pustule grows larger, but less numerous. These (pustules) are distinguished by their cause from variolae—in them, the humor is frigid, in variolae, melancholic²⁴

This happens whenever Saturn departs from his own home²⁵ and, disease-bearing, wanders into that of Jove. Then Jupiter drives out,

23 Pliny (*Naturalis Historiae*, book 32, 45), spoke of a kind of wart called “thymion” or “thymium,” which is here meant. It may be of interest to note what his ideas were. He wrote “The liver of the glanis (a kind of shad), used as an ointment, cures warts, or the ash of the head of maenae (a small fish like the smelt eaten by the poor) ground up with leeks. For thymia they use the maenae raw or the gall of the marine scorpion.” Here the author is differentiating the pustules from the ordinary wart.

24 The medieval theory of “humors” is well known. There were four humors in the body. If these were in proper proportions, temperies, mixture, temperamentum, all was well. But if any obtained the upper hand, there were intemperies and a “temperament.” Sanguis (blood), Pituita or Phlegma, more or less mythical, Chole (bile), and Melanchole (black bile), also mythical, made up the list. One was of the sanguine, the phlegmatic, the bilious or the melancholic temperament according as the one or the other of the humors had the mastery.

25 Now comes what no medieval medical writer could avoid, i.e., the astrologic explanation of diseases. Fracastorius in his prose work (book 2, chap. 12) attributed the outbreak of syphilis to the conjunction of Saturn, Jupiter and Mars, “a conjunction which rarely occurs, and when it does occur, often ushers in great events.” Saturn leaving his own house is an astrologic description of that planet coming near to Jupiter. Fracastorius (*Syphilidis*, etc., book 1) told of “the sinister star of Saturn and the star of Jupiter,” as well as of “lovely Venus and fiery Mars,” all, of course, with their influence. It is not without interest to note that the far famed and much cursed influenza derived its name from being the supposed product of the influence (Italian, “influenza”) of the stars.

purges, evacuates what is left behind by the dire and malignant old god—that which is frequently wont to happen after eighty lustiums in lands where the (human) body is dry. Whence this kind of disease is frequent among the French or Spaniards, rare among the peoples where cold and humor prevail. No Chiron²⁶ for him, nor, as they say, is Machaon able to bring health-giving aid, even with his brother.

Be it that some try to exhibit medicines and to puncture, and sweat the body in a sack, a little bag. Believe me, medicine inadvicely given has often done harm, the ulcer returning will be more scabrous.

Piety alone is pleasing to Those Above—and a longer delay and frequent phlebotomy with the aid of mithridate.

We have seen some wasting away for eleven months—not even then to recover perfect health. In many, *Lepra minor*²⁷ is seen, in many, *Lepra epidimia*, while in others, a speedy death is often wont to call them away—so does the rottenness within prick, press and, burning, inflame, it tortures, itches and burns.

Let us then crave forgiveness of Those Above and, through the altars, peace from Those dwelling in the Heavens. They demand vows and prayers that the Holy Virgin may preserve immune the magnanimous King, so good to his people, who goes among the syphilitic and sick Ligurians as though secure from this disease. May this pious King bear the arms of Caesar, and with the arms of Caesar, may he wear the sacred diadem, a father, worthy of the highest honor, whom all of us Christians of the common people follow, so that the nations may see that we are the people of God.

And, you Italians, first be obedient to that benign King lest he, becoming more severe, ruin you, destroy you.

The rolling die is cast. *Rhamnusia*²⁸ is in action, and she is angry with us being disobedient. Do not, O German Fidelity, dissolve the living bonds and give to others the guidance and the wealth. Something there is for the members, to have as head of the earth, an absolute monarch whom all the peoples and nations of the world do fear. So magnanimous a victor Maximilian, who is the thunderbolt of

26 Chiron was the wisest of the Centaurs, knew all about medicine and taught it to Aesculapius. Even in my time, chronic ulcers were sometimes called chironian or cheironian. Machaon was the son of Aesculapius and as wise as his father. The name Machaon was used generically for physicians. Brant has his mythology mixed here, as was not unusual in his times.

27 "Lepra" is used in so many senses that one can never be sure that one has grasped the meaning of it in any of these old medical writers, and I do not think it useful to give my own guess at what Brant means, if he really means anything.

28 *Rhamnusia* was *Nemesis*, who had a celebrated temple at *Rhamnuu* in Attica, mentioned by Pausanias (1, 33, 2).

war, but yet the lover of peace, I would rather throw myself under the conquering foot of this prince than bear the rule of a man from without

O, Citizens, I pray you let us be members, subject to the Head
Thus will the glory of our fathers ever abide with us Let us follow
the splendid souls of our ancestors, the shades of those of old (for never
should we degenerate) who by their own valor and sweat and mighty
arms achieved the empire and hand bearing the sceptre

So may God and the Mother of God preserve forever the German
rule and the glory of the Teuton ²⁹

29 The enthusiastic author just fails to say "Deutschland uber alles"

CHOLESTEROL STUDIES IN SYPHILIS *

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AND

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NEW YORK

Variations in the cholesterol content of the blood in syphilis have been the subject of interesting research by Pighini,¹ Henes² and others³ All these data are valuable, but they are few In order to be able to make a more definite deduction, we have undertaken to examine this problem in greater detail

There are a number of procedures for the determination of cholesterol⁴ Of these, we chose that recommended by Myers and Wardell⁵ With a few modifications, it became comparatively simple to handle about a hundred determinations a day The details of the technic are described in a paper received for publication by the *Journal of Laboratory and Clinical Medicine*

Thus equipped, we set out to determine the cholesterol content of normal blood, for without it no deductions could be made regarding pathologic variations None of the values recorded in the literature could be used, because they vary greatly Autenrieth and Funk give the normal value as being from 140 to 154 mg per hundred cubic centi-

* Submitted for publication, Dec 14, 1928

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2 Henes, E Cholesterinemia and the Wassermann Reaction, J A M A **64** 1969 (June 12) 1915, Am J Syph **4** 685, 1920

3 Denis, W J Biol Chem **29** 93, 1917 Klein and Dinkin Ztschr f physiol Chem **92** 302, 1914 Knudson, A, Ordway and Ferguson Proc Soc Exper Biol & Med **18** 299, 1921 Levinson, A, Landenberger, L L, and Howell, K M Am J M Sc **159** 561, 1921 McFarland, A K Blood Cholesterol in Syphilis, Arch Dermat & Syph **6** 39 (July) 1922 Weiss, R S, and Essermann, A L Relationship Between Serum Cholesterol and Wassermann Reaction, Arch Dermat & Syph **8** 639 (Nov) 1923

4 Autenrieth and Funk Munchen med Wchnschr **60** 1243, 1913 Bernhard, A J Biol Chem **35** 15, 1918 Bloor, W R J Biol Chem **24** 227, 1916 Leiboff, S L J Biol Chem **61** 177, 1924 Ling, S M J Biol Chem **66** 361, 1928 Myers, V C, and Wardell, E L J Biol Chem **36** 147, 1918 Suranyi, L, and Korenyi Biochem Ztschr **60** 178, 1925 Windaus Ztschr f physiol Chem **55**:110, 1910

5 Myers and Wardell (footnote 4, sixth reference)

meters of whole blood,⁶ while Chaufford places it at from 105 to 165 mg.⁷ More recently, Bloor stated the normal amount of cholesterol to be from 160 to 250 mg.⁸ Still other authors may be quoted.⁹

We were fortunate in obtaining the blood from ninety-nine volunteer subjects, members of the freshman classes of 1926-1927 and 1927-1928 of the College of Physicians and Surgeons, Columbia University. None of these persons showed any clinical signs of abnormality. The results appear in table 1 and chart 1. For twenty-five normal women,

TABLE 1—*Distribution of Values for Cholesterol Obtained in Normal Subjects*

Milligrams per Hundred Cubic Centimeters	Women (25)		Men (74)		Total (99)	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
140 to 149	0	0	5	6.7	5	5.2
150 to 159	4	16	17	22.9	21	21.2
160 to 169	7	28	22	29.5	29	29.3
170 to 179	3	12	13	17.6	16	16.2
180 to 189	2	8	10	13.5	12	12.2
190 to 199	5	20	2	2.7	7	7.3
200 to 209	4	16	4	5.4	8	8.3
210 to 219			1	1.3	1	1.2

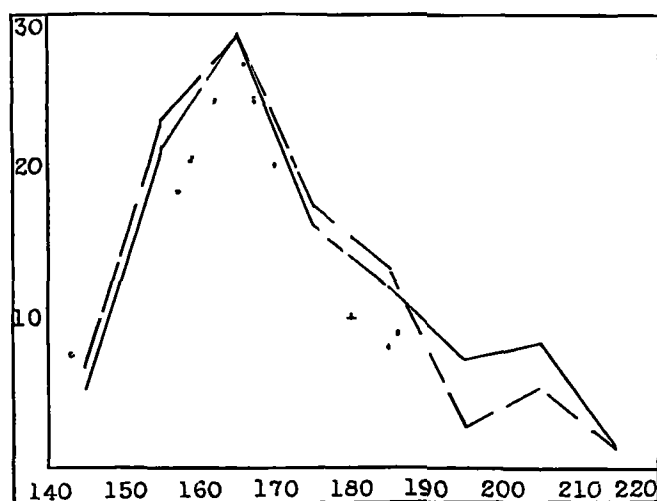


Chart 1—The cholesterol content of the blood in ninety-nine normal subjects. In this and the subsequent charts, the vertical scale measures the percentage of cases, the horizontal scale, the number of milligrams of cholesterol per hundred cubic centimeters of whole blood examined. The dotted line indicates the women, the broken line the men, and the solid line both.

the arithmetical mean is 178 with a standard deviation of ± 16 as calculated from the formula $\sigma = \sqrt{\frac{\sum d^2}{N}}$, for seventy-four normal

6 Autenrieth and Funk (footnote 4, first reference)

7 Chaufford, A., Laroche, G., and Grigaut. *Biol. med.* **11**: 89, 1913

8 Bloor, W. R. *J. Biol. Chem.* **25**: 577, 1916

9 Denis (footnote 3, first reference); Knudson (footnote 3, third reference); Weiss and Essermann (footnote 3, sixth reference)

men it is 168 ± 18 mg per hundred cubic centimeters of whole blood. The frequency curves bring to light an interesting point. An examination of chart 1 shows that the curves for men and women run practically parallel a great part of the route, but diverge between 180 and 190. At the intersection, the curve obtained from analyses of female blood inclines rather steeply upward, the other slopes definitely down. This may be interpreted as indicating a tendency for women to show a higher amount of cholesterol in their blood than men. The third curve in chart 1 gives the results of the total series of ninety-nine normal persons including both men and women. The mean is 171 ± 16 , and the frequency curve takes a course between the curves for the component series. Our figures for normal subjects differ from those previously presented in range, in mean or in both.

TABLE 2—*Distribution of Values for Cholesterol Obtained from Patients with Primary Syphilis*

Milligrams per Hundred Cubic Centimeters	Treated and Untreated Patients (15)		Untreated Patients (10)	
	Number	Per Cent	Number	Per Cent
100 to 109	5	33.4	5	50
110 to 119	1	6.6	1	10
120 to 129	3	20.0	3	30
130 to 139	1	6.6	1	10
140 to 149	0	0		
150 to 159	2	13.3		
160 to 169	1	6.6		
170 to 179	0	0		
180 to 189	1	6.6		
190 to 199	1	6.6		

We then determined the cholesterol content of blood in syphilis. Thus far, we have examined fifteen cases of primary syphilis. In ten of these, there had been no treatment given before samples of the blood were taken. All the patients in this group as shown in table 2 and chart 2, had a low cholesterol content. None of the figures is more than 130 mg per hundred cubic centimeters of whole blood, the mean being 114 ± 10 . The five other figures were obtained from analyses of the blood of treated patients. Since the value given for normal cholesterol content is 171 ± 16 , it becomes evident that the five cases in which treatment was given are practically within the normal range.

The frequency curves in chart 2 group our observations in another way. The peak (the greatest percentage of cases) in the curve for both treated and untreated patients occurs between 100 and 110 mg, then there is a distinct decrease in the ordinate (percentage of cases) as the distance along the abscissa (number of milligrams of cholesterol) increases. Comparing this with the curve for untreated patients, it appears that the section of the curve for the higher values for cholesterol represents the treated patients only.

We are tempted to conclude that in untreated patients with primary syphilis, the cholesterol content of whole blood is low, especially since the group studied consisted of all the untreated patients with primary syphilis among the 200 presented in this study. But of course, much more work has to be done before such a conclusion can be made final. The data presented, however, indicate a strong tendency in that direction.

If eventually such is proved to be the case, it would be extremely significant. There might then be an explanation for the negative Wassermann reaction in early infection with *Spnochaeta pallida*. The

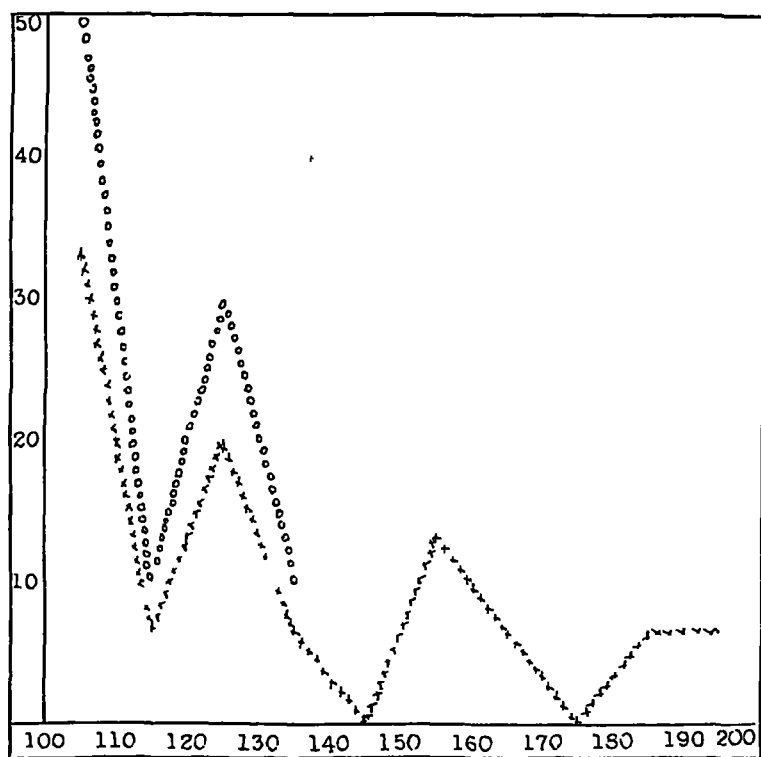


Chart 2—The cholesterol content of the blood in fifteen patients with primary syphilis. The line of small crosses indicates all patients examined, that of the small circles, untreated patients only.

amount of cholesterol being low, the lecithin is free to exert its hemolytic effect. But what happens to the cholesterol? Is it destroyed? Is it mobilized to protect another tissue? Is it used in the manufacture of antibodies? The functions of cholesterol in the body may involve any or all of these and would certainly warrant extensive investigation. The low level of cholesterol does not last long. Treatment brings it directly back to normal. As the disease progresses, the cholesterol content increases even in the absence of medication as will be shown presently in our investigation of secondary syphilis.

In a series of forty patients with secondary syphilis, there were eleven women and twenty-nine men. The data for this group appear in table 3. The mean for the women was 132 ± 33 mg per hundred cubic centimeters of whole blood, for the men 146 ± 29 mg and for both 142 ± 30 . In chart 3 the curve that shows the frequency of the various values for cholesterol in the entire group has two peaks, the higher one between 120 and 130 mg, and the other between 160 and

TABLE 3—*Distribution of Values for Cholesterol Obtained in Patients with Secondary Syphilis*

Milligrams per Hundred Cubic Centimeters	Untreated Patients (16)		Treated Patients (24)		Treated and Untreated Patients (40)	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
80 to 89	1	6.3			1	2.4
90 to 99	2	12.6	1	4.3	3	7.3
100 to 109	4	25.2	0	0	4	9.8
110 to 119	0	0	2	8.6	2	4.9
120 to 129	1	6.3	5	21.5	6	14.6
130 to 139	0	0	3	12.9	3	7.3
140 to 149	1	6.3	3	12.9	4	9.8
150 to 159	3	12.6	1	4.3	3	7.3
160 to 169	1	6.3	5	21.5	6	14.6
170 to 179	1	6.3	3	12.9	4	9.8
180 to 189	1	6.3	1	4.3	2	4.9
190 to 199	1	6.3			1	2.4
200 to 209	1	6.3			0	0
210 to 219					1	2.4

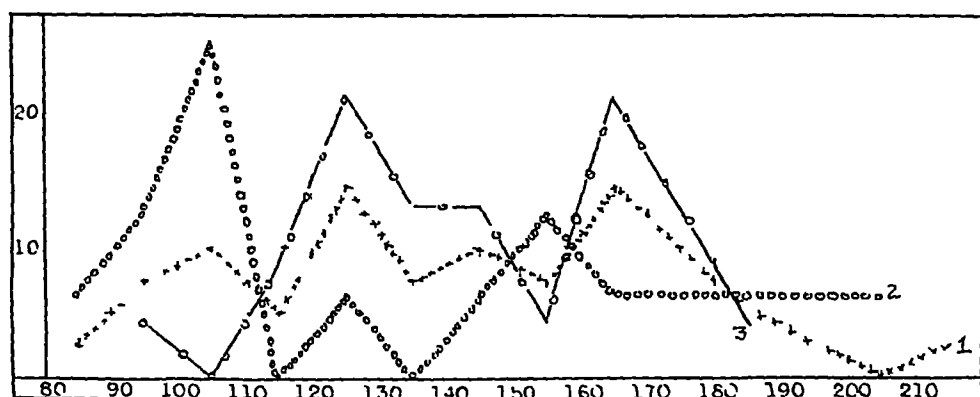


Chart 3—The cholesterol content of the blood in forty patients with secondary syphilis. Curve 1 indicates the entire group, curve 2, the untreated patients, and curve 3, the treated patients.

170 mg. That there is a marked variation in the amount of cholesterol may be inferred from the fact that the curve for secondary syphilis has twice the span of the curve for the normal condition.

If the sixteen untreated patients are considered separately, the greatest percentage gave values for cholesterol between 100 and 110 mg per hundred cubic centimeters, the mean being 139 ± 38 . This is represented by the highest peak of frequency (curve 2) in chart 3. In this group, therefore, as in that with primary syphilis, the patients receiving

no treatment tend to show a lower level of cholesterol than those treated. The differences, however, are less marked in secondary syphilis.

As was already intimated, the cholesterol content of the blood in syphilis appears to approach the normal closer and closer as the disease progresses, even in the absence of treatment. A comparison of the frequency curves brings this out clearly. In chart 2, the curve for the untreated patients with primary syphilis presents no points in the area

TABLE 4—*Distribution of Values for Cholesterol Obtained from Patients with Tertiary Syphilis*

Milligrams per Hundred Cubic Centimeters	Women (34)		Men (69)		Treated Patients (103)		Untreated Patients (25)	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
100 to 109			1	1.4	1	0.9	2	8.0
110 to 119	1	2.9	2	2.9	3	2.9	2	8.0
120 to 129	3	8.8	3	4.3	6	5.8	2	8.0
130 to 139	0	0	5	7.2	5	4.8	1	4.0
140 to 149	2	5.8	5	7.2	7	6.8	0	0
150 to 159	3	8.8	14	20.0	17	16.5	6	24.0
160 to 169	4	11.7	7	10.0	11	10.7	2	8.0
170 to 179	7	20.6	11	15.9	18	17.4	2	8.0
180 to 189	6	17.6	9	13.0	15	14.5	2	8.0
190 to 199	2	5.8	8	11.6	10	9.7	4	16.0
200 to 209	5	14.7	3	4.3	8	7.7	1	4.0
210 to 219	1	2.9	0	0	1	0.9	0	0
220 to 229			1	1.4	0	0	1	4.0
230 to 239					1	0.9		

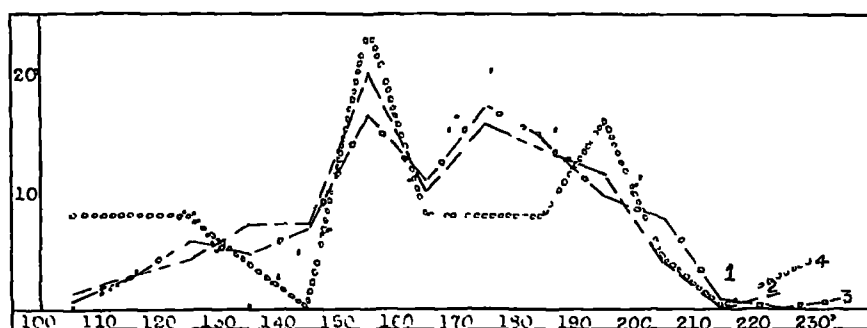


Chart 4—The cholesterol content of the blood in tertiary syphilis. Curve 1 represents the women examined, curve 2, the men, curve 3, treated patients of both sexes, and curve 4, untreated patients.

of values for cholesterol higher than 130 mg. The curve for the untreated patients with secondary syphilis, however, in chart 3, although its peak is in a range lower than that for the treated patients, also shows a large percentage of the cases with higher values for cholesterol. The same general principle will be seen in tertiary infections.

We were able to study 128 patients with tertiary syphilis. In table 4 appear the analyses for 103 treated patients—34 women and 69 men. The mean for the former is 172 ± 25 mg per hundred cubic centimeters, for the latter 165 ± 30 mg and for the combined list 167 ± 25 mg.

A striking similarity is seen between this and the normal curve. A possible explanation for these observations might be that in tertiary syphilis, the body has become more or less accustomed to the infection and the faculties have been called on. The value for the cholesterol, although still showing great fluctuation (indicated by the decided increase in the span of the curves in chart 4) is more nearly normal than during the primary or secondary stages of the disease. And if so, the general contour of the frequency curves should be the same as that of the normal curves. This is very nearly the case.

The frequency curves in chart 4 showing peaks between 150 and 180 mg, point much closer to the normal range than do the curves for primary or secondary syphilis. Moreover, curve 1 in chart 4 shows a distinct rise in the percentage of women giving values for cholesterol

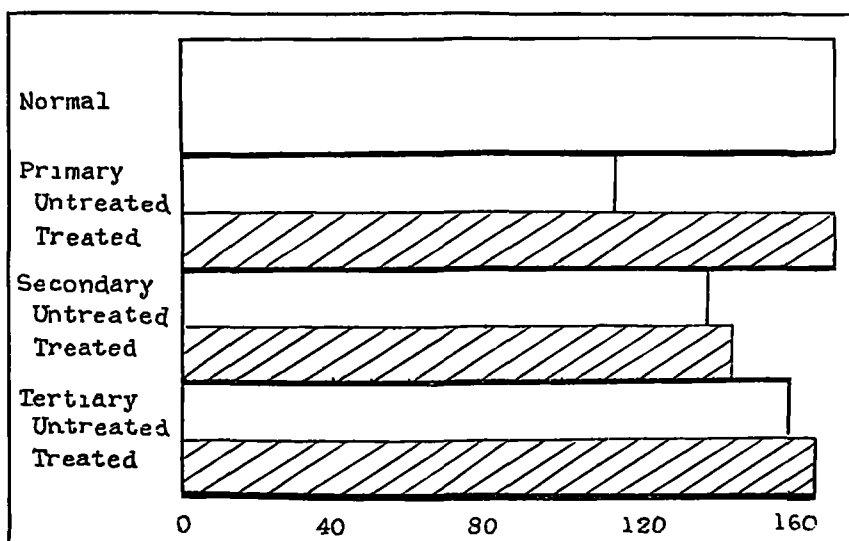


Chart 5—The average cholesterol content of the blood measured in milligrams per hundred cubic centimeters

between 200 and 209 mg, whereas curve 2 presents a steady decrease in the percentage of men showing a high cholesterol content. The point of intersection of the two curves is practically at the same coordinates as the point of intersection of the normal curves in chart 1. It may be added, further, that the peak in curve for women in chart 4 is reached between 170 and 180 mg instead of between 160 and 170 as in chart 1, again indicating the tendency of women to have more cholesterol in their blood than men.

In untreated patients with tertiary syphilis, the mean cholesterol content for twenty-five cases is 160 ± 31 . The peak of frequency curve 4 of chart 4 in the lower range is higher than that for the treated patients. Here too, then the untreated patients show a higher percentage with a lower cholesterol content than the treated patients. A glance at the

curves for untreated patients in charts 2, 3 and 4 reveals the peak moving closer and closer to that of the curves for treated patients with syphilis until in tertiary syphilis the two nearly coincide. This gives further evidence that the cholesterol tends to increase as the disease advances, the increase varying directly with the age of the disease. It would indeed be interesting to ascertain how this spontaneous rise in cholesterol content is related to the rise in the antibody content and what processes enable the body to create this compensation. In all probability this would be the next step in the solution of our problem.

SUMMARY

In summarizing, it may be best to list our observations in the following way

TABLE 5—*Values for Cholesterol in Milligrams Per Hundred Cubic Centimeters of Whole Blood*

Condition	Treatment	Value	Number of Patients
Normal		171 ± 16	99
Primary syphilis	Not given	114 ± 10	10
	Given	172 ± 16	5
Secondary syphilis	Not given	139 ± 38	16
	Given	145 ± 23	24
Tertiary syphilis	Not given	160 ± 31	25
	Given	167 ± 25	103

The relation is shown in another form in chart 5

UNTOWARD REACTIONS FOLLOWING TOXIN TREATMENT FOR DERMATITIS VENENATA *

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In 1916, Schamberg ¹ informally reported favorable results following treatment for dermatitis venenata due to ivy (*Rhus toxicodendron*) by means of oral administration of an alcoholic extract of the leaves of the plant. He made a formal report ² in 1919, in which he advised two types of treatment: preseasonal prophylactic and seasonal curative. In both treatments, he began with the administration of very small doses (1 or 2 drops) of the alcoholic extract by mouth. In the preseasonal cases the extract was given three times daily, each dose being increased by 1 drop until 21 drops were reached, at which time the dosage was increased to 1 teaspoonful. This dosage was to be continued throughout the season. If dermatitis had already developed, the system of treatment was the same, except that each dose was increased by 2 drops. After the dosage reached 18 drops, it was increased to 1 teaspoonful three times a day.

In 1918, Strickler ³ advised the daily hypodermic injection of an alcoholic extract of the leaves of the poison ivy plant. He advocated this for both preseasonal prophylaxis and seasonal treatment. For prophylaxis, from three to five injections were given, varying in size from 0.3 to 0.5 cc. These were to be followed by the oral administration of the extract. Seasonal treatment consisted of from three to five injections given at from twenty-four to twenty-eight hour intervals. The dose varied from 0.3 to 0.7 cc. Strickler reported excellent results. Ninety-four per cent of his patients were either cured or greatly relieved. Many patients obtained relief twenty-four hours after the first injection, and the skin was usually restored to normal in four or five days. Little, if any, benefit was noted in 5.3 per cent of the patients. No untoward results were encountered.

Following these reports, the specific treatment for poisoning due to poison ivy became popular, the injection method probably the more so. A number of physicians reported good results. Among these were many leading dermatologists, such as Wile, Ormsby, Cole, Wise and Schamberg ⁴. No untoward results were mentioned in the early articles.

* Submitted for publication, Dec. 5, 1928.

1 Schamberg, Jay F. Lectures to Graduate Students, Graduate School of Medicine, University of Pennsylvania.

2 Schamberg, Jay F. Desensitization of Persons Against Ivy Poison, J. A. M. A. **73** 1213 (Oct. 18) 1919.

3 Strickler, Albert. J. Cutan. Dis. **36** 327, 1918.

4 Wile, Ormsby, Cole, Wise and Schamberg, quoted by Alderson (footnote 5).

Alderson⁵ first applied this treatment in cases of dermatitis due to the poison oak (*Rhus diversiloba*) of the western coast. He advised both preseasonal and seasonal treatment, and used both the oral and the injection methods of administration. He reported good results in all but 8 per cent of the patients who remained under observation. He encountered no untoward reactions to the treatment.

In his discussion of Alderson's paper, Dr. William Donald spoke favorably of the results from this treatment in many cases of poisoning due to poison oak seen at the University of California Infirmary.

Clock⁶ modified the vehicle of the product used for injection by substituting almond oil for alcohol. He claimed that this markedly decreased the pain following the injections. He reported excellent therapeutic results.

Williams and MacGregor⁷ treated twenty-six patients by the injection method and observed beneficial results in all cases. They advised an initial dose of 1 cc. to be repeated daily. No ill effects were encountered.

Bivings⁸ secured excellent results by the injection method in the treatment of 105 patients with poisoning due to poison ivy. Of these, 103 were greatly relieved within seventy-two hours. Moreover, they remained free from dermatitis, although they were subsequently daily exposed to contact with the plant. Fifteen boys who were known to be very susceptible were given prophylactic treatment consisting of the injections and also of the administration of the extract orally. Thirteen developed an immunity to the disease. No untoward reactions were observed.

As in the case of all new valuable remedies, authors of early articles were unanimously enthusiastic over the results obtained by this specific treatment. As usual, the pendulum has recently swung somewhat to the other extreme, now some observers are, to say the least, not as certain of its value as formerly. For instance, the editor of the "Query and Minor Notes" section of *The Journal of the American Medical Association*⁹ answered that "It is doubtful whether a patient may become desensitized to poison ivy through treatment."

UNTOWARD RESULTS

None of the authors mentioned noted any untoward results from the treatments given.

5 Alderson, Harry. *California & West Med* **23** 982, 1925.

6 Clock, R. O. *Ann Clin Med* **4** 591, 1925-1926.

7 Williams, C. M., and MacGregor, J. R. Treatment of Ivy Poisoning by Rhus Tincture and Antigen, *Arch Dermat & Syph* **10** 515 (Oct.) 1924.

8 Bivings, F. L. Successful Desensitization and Treatment of Poison Ivy and Poison Oak Poisoning, *Arch Dermat & Syph* **9** 602 (May) 1924.

9 Desensitization to Poison Ivy, *J A M A* **91** 664 (Sept 1) 1928.

Corson¹⁰ seems to have been the first to have reported an unfavorable result. He reported a case of universal dermatitis venenata occurring promptly after three injections of the antigen. The patient had had an attack of ivy poisoning. After the eruption subsided, he was given three injections. A typical, almost universal eruption of dermatitis venenata broke out promptly, and it was nearly four weeks before it had disappeared. In discussing this paper, Dr. Strickler disagreed with Dr. Corson's history and interpretation of the case; he would classify this as a failure rather than an untoward result. He stated that in his own experience, and in that of numerous physicians who had used the antigen, harmful effects were not observed, and that cases of dermatitis venenata had not occurred as a result of the use of the remedy.

In the round table discussion mentioned previously, Howard Morrow¹¹ said that some of the patients, while taking his preparation, had the most severe attacks of dermatitis that they had ever had.

Spain and Cooke¹² warned against reactions that occur when large doses are given. They advocated a scheme of treatment in which very small doses were used in the beginning and gradually increased—essentially a desensitizing process. They test the susceptibility of the patients first by determining the highest dilution of the extract which will produce a dermatitis when applied to his skin. After this has been determined, they begin treatment with 0.1 cc. of the particular dilution and increase the dose cautiously. It has been their experience that when the dosage is increased in strength too rapidly or the interval between injections is too short a constitutional reaction may occur, generally from twelve to twenty-four hours after the injection. This reaction may consist merely of a generalized pruritus, or lesions typical of ivy poisoning may appear, either generalized or limited to the areas of delicate skin, such as the flexor surfaces. They expressed the belief that their method develops a satisfactory degree of clinical immunity to poison ivy (by either the oral or the injection route).

UNTOWARD RESULTS OBSERVED BY THE AUTHOR

In February, 1928, I read a paper before the Alameda County Medical Society in which brief mention was made of reactions following the intramuscular injection of extracts from poison oak. The paragraph¹³ read

10 Corson, Edward F. The Value of the Toxin of *Rhus Toxicodendron* and *Rhus Venenata*, *J. A. M. A.* **81** 59 (July 7) 1923.

11 Morrow, Howard, quoted by Alderson (footnote 5).

12 Spain, W. C., and Cooke, R. A. *J. Immunol.* **13** 93 (Feb.) 1927.

13 Templeton, H. J. *California & West Med.* **28** 64, 1928.

A reaction, distinctly allergic in character, which I have observed in a few of my patients treated by this method and which I have not seen mentioned in print is the occurrence of widespread urticarias following the injection of poison oak extract into patients suffering from poison oak. These I have interpreted as true allergic reactions, as the urticarias came on immediately following the injection of an allergen, poison oak, to which the patients were known to be sensitive.

CASE REPORTS

CASE 1—Miss A. V., a nurse, aged 18, was exposed to smoke from burning poison oak brush on June 29. On July 2, a mild but typical dermatitis venenata developed on both arms. There was very little itching or burning. I saw the patient on July 3, and ordered daily intramuscular injections of Broemmel's poison oak extract. An injection was given this same day. The condition remained about the same through July 4 and 5. On July 5, a second injection of the extract was given. That night the patient was awakened by pruritus of her whole body and discovered a rash which covered her arms, chest and legs. I saw the patient again on July 6. The closely aggregated vesicles of typical poison oak had largely faded from the arms. The chest, back, arms, legs, abdomen and face were covered by slightly elevated wheals which varied in size from that of a split pea to a dime. In many places they were confluent and formed very large plaques. The eyelids were badly swollen. Itching was intense. This rash was typically urticarial. My notes on the chart read: "Patient presents a mixture of an old fading poison oak plus a somewhat generalized urticaria. This is the type of untoward reaction which I have described previously. It consists of small wheals blending into large urticarial plaques. I believe that such patients are sensitized by their attack of poison oak and then react with an allergic reaction to the antigen which is injected by way of treatment."

There is no history of allergy in the patient or her family. Her brother is subject to poison oak. She has never had poison oak previously, although she has been exposed to it all of her life. She received some toxin-antitoxin four years ago, but has had no serum lately.

The poison oak injections were stopped. Cool boric compresses and calamine lotion were applied. Recovery followed in about one week.

CASE 2—C. J., a school boy, aged 12, was referred to me by Dr. Hobart Rogers. He was exposed to poison oak eight days previously. The next day he developed poison oak on his face, hands, and genitals. Dr. Rogers gave him three injections of Cutter's Toxok at daily intervals. The injections were given intramuscularly. The poison oak rapidly faded. The next day the eruption recurred on his face, arms, and genitals. In these areas two types of eruptions could be found, one was a papulovesicular dermatitis such as is seen in poison oak. This constituted only a small part of the picture, however, for the major portion of the eruption consisted of an urticarial plaque (about 3 x 6 inches) around the site of the infection of the Toxok. This boy's mother, grandparents, and great grandparents suffered from various allergic disturbances (case 3). Mild local applications effected a cure within about a week.

CASE 3—Mrs. G., mother of patient in case 2, developed poison oak on her face one week previously. One injection of Toxok caused this to disappear within three days. The second day following the injection she noticed itching and swelling of the skin at the site of the injection. The swelling spread rapidly. When I saw her, the outer surface of the whole arm from the wrist to the shoulder was covered by an almost solid urticarial plaque. Numerous smaller wheals and

pseudopods surrounded the main plaque. This swelling subsided under the use of cool boric compresses and calamine lotion.

CASE 4—Mr J H C, a salesman, aged 24, was referred to me by Dr Gordon Roberts. He had developed poison oak about ten days previously. Four days after the onset he was very properly given three daily injections of Toxok (Cutter) by his physician. The poison oak improved somewhat but after the second injection he noted itching and swelling of the skin around the site of injection. This spread rapidly and covered the whole body within three days. When seen by me practically his whole body was covered by an urticarial rash such as I have described in the previous cases. There was also a small element of papulovesicular dermatitis (oak) scattered throughout the urticaria. The urticaria was especially pronounced around the area where the Toxok was injected. Under the use of soothing lotions locally, adrenalin injections and ephedrine by mouth, this patient recovered in three weeks.

CASE 5—(Patient of Dr Jay Frank Schamberg, reported by his courtesy.)

A young woman of 20 after riding horseback in a wooded suburban country developed, in the month of November, a severe case of oak poisoning associated with great itching. Under topical applications the inflammation started to disappear. A toxin extract was employed deep intramuscularly in the buttocks in an initial dose of about 0.2 cc. Two days later 0.4 cc was used, and two days later, about 0.5 cc. Coincident with the decline in the eruption, the itching became furious so that the patient could not sleep at night. Scratching resulted in an artificial dermatitis, with some urticarial reaction in the skin. The use of bromides, luminal, and other remedies failed to give relief from the itching or to induce sleep, and we were finally able to bring about this result only by hypodermic injections of morphia. I am of the opinion that in this case the plant extract was responsible for the violent increase in itching. As regards the urticarial reaction, I cannot be positive inasmuch as she has had on several previous occasions an attack of urticaria.

The foregoing cases are the only ones in which the records are available, but I have seen several more patients at the clinic of the University of California Infirmary who presented exactly the same syndrome.

These cases demonstrate two hitherto undescribed types of untoward cutaneous reactions to the injection of the extract of poison oak. Both of these are urticarial.

The localized type occurs on the skin around the site of injection of the extract of poison oak. It makes its appearance from twenty-four to forty-eight hours following the injection. The primary lesion is an urticarial wheal. There may be a group of small wheals, or these may coalesce into one or several large plaques. These plaques may show pseudopods. The plaques vary in size from lesions 3 inches (7.6 cm) in diameter to enormous lesions extending from the wrist to the shoulder. Itching is intense.

The generalized eruption may begin as a localized one, such as that described in the preceding paragraph, which subsequently tends to spread over the body, or it may suddenly appear over the body without having been preceded by a localized eruption. In either case it consists of two

distinct types of primary lesions, urticarial wheals and the papulovesicles of dermatitis venenata. These occur together in varying percentages, but the wheals generally dominate the picture. The pruritus is extremely severe, and the patient is reduced to a nervous wreck. Hospitalization is necessary in some cases.

Both the localized and the generalized eruptions begin within from twenty-four to seventy-two hours after the injection of the extract of poison oak into patients suffering from dermatitis from that plant. They both occur as a type of reaction, urticaria, which is a common expression of allergy. Some of the patients have had allergic histories, while others have not. The material which is injected is an extract of the poison oak plant. It is my belief that the patient is sensitized to the extract of poison oak by the disease itself, and that he reacts allergically to the injection of the specific allergen which is being used for the purpose of treatment.

Treatment for these unfortunate complications has consisted mainly of cool boric compresses for the more swollen areas and calamine lotion elsewhere. When the lesions begin to disappear, an oily calamine liniment has been substituted for the lotion. Epinephrine and ephedrine do not act as well in these cases as in the plain urticarias. This is also true of calcium lactate. Sedatives are frequently required, and I have had my best results with *cannabis indica*.

It should be noted that the reactions which I have described are distinctly different from the ill effects previously noted by Corson and by Spain and Cooke. Their cases presented a spreading or a generalization of what they described as typical ivy poisoning following the specific injections. Spain and Cooke believed that this was due to a transfer of the active principle through the blood or lymph channels to tissues remote from the site of contact and the development there of dermatitis as a result of *Rhus toxicodendron*. My cases did not fall in this category, instead they presented localized or generalized urticarial wheals.

COMMENT

In spite of the few unfavorable cases, I am convinced that the specific antigenic treatment for dermatitis from the *Rhus* family is of great value. It is certainly much better than older treatments consisting only of local applications. Still, the present injection method with its dosage of 1 cc seems to be a two-edged sword which at times produces harm. During the past two years I have abandoned the orthodox doses of 1 cc and have attempted gradual desensitization, beginning with very small doses. For preseasonal treatment, I revert to the exact scheme of oral desensitization originally advocated by Schamberg. For treatment in mild cases of poisoning due to poison oak I also use the oral route, but I

increase the dosage more rapidly I use the injection methods only in severe cases The method of Spain and Cooke would seem to be ideal, so far, however, I have not used various dilutions, but have simply used the standard strength, giving 0.1 cc instead of 1 cc as the original dose and increasing by 0.1 or 0.2 cc each day It is extremely important to give the injections intramuscularly and to avoid spilling any of the extract on the skin

I have had no untoward reactions since I abandoned the larger doses, and my results seem to be equally good

IMMUNOLOGIC ASPECTS

The irritating factor in poisoning from *Rhus diversiloba* is lobinol (a polyhydrophenol¹⁴) Absolute immunity to its concentrated form probably does not exist¹⁵ Relative immunity exists, about one person in eighteen being highly susceptible¹⁵ It was formerly thought that the American Indian was highly immune,¹⁶ but this was denied by Deibert and Menger¹⁷ Krause and Weidman¹⁸ tested the cutaneous reactions to the extract of poison ivy before and after courses of intramuscular injections, and found that no immunity was conferred on the subjects by the injections Spain and Cooke¹² also noted that immunity could not be demonstrated by negative reactions to skin tests following a course of injections, but believed that it was demonstrated by the history of the patient's improvement

SUMMARY

1 Cases have been presented to demonstrate a hitherto undescribed untoward reaction to the injection of an antigen of poison oak, urticarial in nature

2 It is believed that desensitizing methods of treatment, beginning with very small doses of the extract followed by a gradual increase are preferable to the present orthodox large doses This applies to both oral and intramuscular administrations

14 McNair, J B *Rhus Dermatitis, Pathology and Chemotherapy*, Chicago, University of Chicago Press, 1923, p 97

15 McNair, J B *M J & Record* **119**: 129 (June 4) 1924

16 Lam, E S *Skin Diseases Among Full-Blood Indians of Oklahoma*, J A M A **61** 168 (July 19) 1913

17 Deibert, O, and Menger, E F *J Immunol* **8** 287 (July) 1923

18 Krause, G L, and Weidman, F D *Ivy Poisoning*, J A M A **84**: 1996 (June 27) 1925

THE SPIROCHETICIDAL ACTIVITY OF THE HUMAN SYPHILITIC SERUM AND THE IMMUNOLOGIC SIGNIFICANCE OF THE WASSERMANN REACTION *

JOHN A KOLMER, M D

WITH THE ASSISTANCE OF

ANNA M RULE

PHILADELPHIA

EXPERIMENTAL WORK

Rabbits were inoculated intratesticularly with the Nichols-Hough strain of *Spirochaeta pallida*, when acute syphilomas developed, showing numerous actively motile organisms by dark-field examination, the animals were castrated, and finely divided suspensions of the infected tissues were prepared in warm saline solution. These were so diluted that each microscopic field showed ten or more actively motile spirochetes, and the intratesticular injection of 0.5 cc amounts into suitable rabbits gave 100 per cent "takes."

Amounts of 10 cc were placed in small sterile test tubes along with amounts of 2 cc of unheated sterile serums from healthy nonsyphilitic and syphilitic persons. These mixtures were kept in a water bath at 37 C for two hours, then 0.5 or 1.5 cc of each was injected intratesticularly into selected rabbits. Controls were included in each experiment, in which 2 cc amounts of saline solution were employed instead of serum.

The serums were freshly prepared and used unheated in order to utilize the native human complement of each.

The syphilitic serums were selected from acute and chronic (latent and active) cases in which the patients showed strongly positive Kolmer Wassermann reactions (441— or stronger).

All the controls gave "positive takes," although the syphilomas developed more slowly than in the rabbits inoculated in the usual manner with freshly prepared emulsions, followed immediately by injections. In other words, the results indicated that spirochetes in finely divided tissue suspensions underwent some destruction or reduction in virulence when exposed in a water bath at 37 C for two hours in a menstrum of saline solution.

In some of the animals inoculated with spirochetes exposed to fresh human syphilitic serum under the same conditions syphilis did not develop, but exactly similar results were observed in duplicate tests conducted at the same time with the fresh serums of normal human beings. In one experiment, as many as 50 per cent of the inoculated

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* From the Research Institute of Cutaneous Medicine of Philadelphia

rabbits failed to develop syphilis with both kinds of serums. In some animals the lesions developed slowly, showed spirochetes for but a brief time and then rapidly subsided, but with infection of the lymph glands as shown by lymph gland transfers to fresh animals.

The results varied with different suspensions of testicular material containing spirochetes, but it was apparent in these experiments that fresh normal nonsyphilitic human serums produced the same effects in vitro as the fresh serums from chronic cases of syphilis (latent and active) in which the patients showed strongly positive complement-fixation reactions.

In other words, fresh unheated normal and syphilitic serums are slightly more destructive for *Spirochaeta pallida* at 37 C. in vitro in an exposure of two hours than is physiologic solution of sodium chloride, but in approximately equal degree.

These results are essentially in confirmation of the investigations of Finger and Landsteiner,¹ who inoculated a series of twelve apes with mixtures of virus and serum from patients in various stages of syphilis after the mixtures were allowed to stand for one and one-half hours, in each animal a lesion developed at the site of inoculation, indicating that the serum did not possess a high degree of spirocheticidal activity. They also confirm the negative results reported by Kolmer and Broadwell,² in 1916, in an investigation of the spirocheticidal properties of syphilitic serums in vitro for cultures of Zinsser's strain A of *Spirochaeta pallida*. They are, however, in conflict with the results of Eberson,³ who reported that the serums of some patients with latent syphilis in whom infection was thought to have occurred at a more remote time was found to possess spirocheticidal activity for virulent organisms from rabbit lesions, although the serums of seven patients who had recently had acute syphilis did not have this power.

Therefore, additional experiments were conducted to ascertain whether or not human syphilitic serums possessed any curative (spirocheticidal) properties in vivo.

Rabbits were inoculated intratesticularly with the same strain. When acute lesions had developed showing numerous actively motile spirochetes by dark-field examination, they were given daily intravenous injections of from 2 to 3 cc. of serum per kilogram of body weight corresponding to as much as from 120 to 180 cc. for human adults weighing approximately 130 pounds (59 Kg.). One half of the animals received injections of fresh serums from healthy nonsyphilitic persons, and the remainder received injections of the fresh serums of syphilitic persons in the chronic (latent and active) stages of the disease who yielded strongly positive Kolmer Wassermann reactions.

1 Finger, E., and Landsteiner, K. Arch f Dermat u Syph 71 147, 1906

2 Kolmer, J. A., and Broadwell, S., Jr. J Immunol 1:429, 1916

3 Eberson, J. Arch f Dermat u Syph 4:490, 1921

At least four injections and a dark-field examination were given to each animal at daily intervals over a period of sixteen days

In no instance were there any appreciable curative (spirocheticidal) effects. We thought there was a possibility of finding slight curative activity on the part of both normal and syphilitic serums owing to the nonspecific effects of the serum proteins at least, but the results were entirely negative with both kinds of serums in all experiments

Additional rabbits were given intravenous injections of syphilitic serums in the same amounts before intratesticular inoculation with tissue suspensions of *Spinochaeta pallida*, followed by three or four subsequent intravenous injections at daily intervals, all showed acute testicular lesions in approximately the same time as the controls which received injections of serums from healthy nonsyphilitic persons in the same dosage and manner

These results confirm those of Finger and Landsteiner, who treated two patients with chancres with the serum of syphilitic apes without curative effects, and those of Truffi,⁴ who attempted to protect rabbits against syphilitic infection by injections of serum from other syphilitic rabbits immune to second infection, as well as those summarized by Neisser⁵ of numerous earlier attempts at passive immunization in syphilis

They also lend support to the opinion that acquired immunity in syphilis is not humoral in character, that is, is not due to demonstrable spirocheticidal antibodies in the serum, and that specific serum prophylaxis and treatment of syphilis does not occur and is not possible by injections of syphilitic human serums

The results are also of interest in relation to the immunologic significance of the Wassermann reaction. Syphilitic serums containing large amounts of complement-fixing antibody are apparently devoid of appreciable specific spirocheticidal activity both in vitro and in vivo, indicating that this type of antibody is without direct effect on *Spinochaeta pallida* and that its presence does not denote the coincident presence of antispirocheticidal substances. It may be, however, that the complement-fixing antibody is an index of acquired tissue immunity in syphilis, although the evidence is not clear. This possibility is indicated, however, by the results of Moore and Kemp⁶ in the treatment of early syphilis, since they found that a "prematurely negative" Wassermann reaction may indicate a lack of resistance to syphilitic infection on the part of the patient

Unfortunately, there are no accurate methods at present for demonstrating the presence of antispirochetic antibodies in cells, so the

4 Truffi, M. *Centralbl f Bakteriol* **44** 145, 1910

5 Neisser, A. *Arch f Dermat u Syph* **44** 431, 1898

6 Moore, J. E., and Kemp, J. E. *Bull Johns Hopkins Hosp* **39** 36, 1926

relationship of the Wassermann reaction to fixed tissue immunity in syphilis is still an open and important question. But at any rate it would appear that a positive Wassermann reaction, including persistently positive reactions, is indicative of spirochetic activity and that the Wassermann reaction is at least an index of infection in syphilis, although strict parallelism between the complement-fixation and precipitation reactions of syphilis and its clinical manifestations is not to be expected, since the substances responsible for the serum reactions may be produced by the infection of tissues producing little or no clinical disturbances.

SUMMARY

1 The freshly prepared serums from chronic, latent and active cases of syphilis in which the patients gave a positive Wassermann reaction were no more spirocheticidal in vitro than the serums of normal nonsyphilitic persons.

2 Four daily intravenous injections of serum from patients with chronic syphilis who had positive Wassermann reactions into rabbits with acute testicular syphilis, in doses of from 2 to 3 cc per kilogram of weight, had no more appreciable effects on the lesions than injections of similar amounts of serums from healthy, nonsyphilitic persons.

3 Intravenous injections of serums from syphilitic and nonsyphilitic persons were without prophylactic activity in rabbits inoculated intratesticularly with *Spn ochaeta pallida*.

4 Apparently no part of acquired immunity in syphilis is essentially humoral because of the absence of demonstrable amounts of spirocheticidal antibody in the serum.

5 The Wassermann antibody is not spirocheticidal nor associated with spirochetisidal substances in syphilitic serum. Its presence may, however, be an index of tissue immunity in this disease.

6 Serum prophylaxis and treatment for syphilis is not possible by present methods.

Clinical Notes

ISCHEMIA OF ONE FINGER*

H H HAZEN, M D, WASHINGTON, D C

In the March, 1929, number of the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY there appeared an article by Dr William Allen Pusey on "ischemia of one finger" Dr Pusey's statement regarding the rarity of the condition prompted me to report another instance

The patient was a physician, aged 45, who had a ruptured appendix fifteen months before coming under my care This had been followed by abscesses of the middle ear, Vincent's angina and a fractured transverse process of the third lumbar vertebra Early in the summer of 1924, he went on a short vacation to one of the lakes in Maine, and on a warm day swam in cold water When he emerged from the water, the middle finger of the right hand was stiff and painful, before he finished dressing it was absolutely white, and there was no evidence of circulation as revealed by pressure on the nail All the other fingers appeared normal, and the circulation at the wrists was normal In the course of half an hour the finger became cyanosed, but by the end of an hour it had again become normal On several other occasions, exposure to a cold wind or immersion of the hand in cold water for a few minutes resulted in a similar, but milder, ischemia of the same digit Fearing the onset of Raynaud's disease, the patient went to a hospital two weeks later There the diagnosis of pernicious anemia was made The red blood count showed 2,000,000 cells, and the hemoglobin content was 45 per cent The physician has shown marked improvement under treatment with transfusions and a liver diet, and he has had no further trouble with the hand

* Submitted for publication, April 10, 1929

Biography

ERNEST BESNIER

1831-1909

B BARKER BEESON, M D

CHICAGO

Ernest Henri Besnier was born at Honfleur, France, on April 21, 1831, of old Norman stock. His father was at first an army officer and later a customs official. Besnier's early life was rather migratory, being spent at Givet, Marseilles, Orleans and Paris. He took up the study of medicine in the French capital and became an intern there toward the latter part of 1853. His internship of four years was spent largely in medical services, one year being passed with Philippe Boyer, an excellent surgeon and a descendant of the Boyer of the First Empire. Besnier is said at first to have been attracted to surgery, but he soon decided to specialize in internal medicine. In 1857, he received the doctorate in medicine with an impressive thesis entitled "A Study of the Diagnosis and the Treatment of Occlusion in the Abdominal Cavity." This thesis was striking because of both the personal research and extensive documentation which it contained. A memoir along the same line was later crowned by the Academy of Medicine. Ten years after graduation, Besnier was made physician to the Hospitals of Paris. The most noteworthy part of his career was spent at the Hospital Saint Louis, where he remained for twenty-five years. It was most unfortunate that he did not become a member of the faculty. As Thibierge has remarked in his splendid obituary, had Besnier taken the examination for professeur agrégé he would undoubtedly have been successful and thus been eligible for a chair, but he did not do so. The minister of public instruction is said to have charged Besnier with the giving of a course of instruction in skin diseases in 1877. Plans were made for its inauguration that same autumn, but opposition developed, and it was not given. Besnier is said to have been opposed because of not being an agrégé. He refused to give a course unless it was approved by the faculty, which thus lost the chance of adding a true savant to its ranks. The Academy of Medicine elected Besnier to membership in 1881, not as a dermatologist, but because of his earlier contributions on epidemiology. He served as an ambulance physician during the Franco-Prussian War, and was given the cross of the Legion of Honor for services rendered during the siege of Paris. Strange to say, he was not made an officer of that order until 1894.

From 1864 to 1872, Besnier wrote a good deal concerning internal medicine, taking up such subjects as pleurisy, cholera, biliary lithiasis,

rheumatism and disorders of the spleen. During the period from 1866 to 1881, at first as secretary and later as secretary-general of the Medical Society of the Hospitals of Paris, he wrote noteworthy reports every three months on the prevalent disorders, comparing those of Paris with those present in the other large French cities. His conclusions were summed up in a note on the laws which regulate epidemics.

The retirement of Bazin from the Hospital Saint Louis, at the end of 1872, changed Besnier's destiny and resulted in his taking up dermatology. This was a decided change for one who was already regarded as being among the foremost internists of France. Being next in line he was eligible to succeed Bazin, but it was not thought that he would quit internal medicine for dermatology. To the surprise of all, Besnier announced his intention of doing so, and with his characteristic energy and application he began at once to perfect himself in the knowledge of diseases of the skin. He was already familiar with the works of Bazin as well as with those of Erasmus Wilson. During his first year or two at Saint Louis, he spent a good deal of time with Lailier and Alfred Hardy, who aided him considerably both as to diagnosis and therapy. From then on Besnier was a consistent contributor to the progress of dermatology. He was a constant source of inspiration to his pupils. Sabouraud has said that his masterly researches on ringworm were begun and carried on at the instigation of Besnier. Endowed with an unusual capacity for work, for twenty-five years Besnier kept up his daily rounds, clinics and dispensary work, besides attending to a large private practice. He also did a great deal of writing and editing, especially in connection with the *Annales de dermatologie et de syphiligraphie*.

Besnier's best known work was the translation and annotation, with Doyon, of Kaposi's "Lessons on the Pathology and Treatment of Skin Diseases," which went through two editions in 1881 and 1891. It was for a long time the accepted textbook on dermatology in France. Most of the extensive notes were due to Besnier, who generously shared the credit with his colleague. Among the most interesting notes were those on the erythrodermas, the acnes, the eczemas, leukoplakia, mycosis fungoides, alopecia areata and the cutaneous atrophies. Later, with Brocq and Jacquet as co-editors, plus a corps of other collaborators, he wrote "La pratique dermatologique," the largest known work on dermatology, comprising four volumes. Besnier himself contributed the extensive article on eczema. Among the subjects about which he also wrote may be mentioned pityriasis rubra pilaris, colloid degeneration of the skin, chronic pemphigus, cutaneous myomas, pyemycosis erythemas, the dermatophyties, the prurigo of Besnier, tuberculous gummas, tumor-like xanthomas, the keratodermas, lupus vulgaris (he was among the first to realize its true nature), the electrocautery in lupus vulgaris, the contagiousness of leprosy (which he proved), the

mutilating form of farcy, the articular form of psoriasis, the use of pyrogallic acid in skin disorders and the employment of tuberculin, which he was among the first to test. Besnier's writings were models of conscientious and scientific work. The bibliographies were excellent and correct to the last detail. His clinical descriptions were equally precise. He was instrumental in improving dermatologic nomenclature by casting out such terms as "syphilitic psoriasis" and "syphilitic acne." From the standpoint of etiology, he never failed to stress the importance of constitutional disorders and of morbid predispositions, and thus emphasized the connection between skin diseases and general medicine.

Largely on the initiative of Besnier, about 1881 the Thursday sessions of the physicians of the Saint Louis Hospital were inaugurated. They enabled the most interesting cases to be shown and more widely discussed. With Alfred Fournier and Émile Vidal, Besnier took a leading part in these gatherings. They resulted in the formation of the French Society of Dermatology and Syphilography in 1889. Besnier acted as president of that body for ten years, and he was an ideal presiding officer there as well as at the International Dermatological Congress of 1900 at Paris. He was always listened to with the respect befitting the leader of the French school of dermatology. Thibierge has said, "And since the most illustrious representatives of dermatology, the world over, were to be seen at these meetings, he (Besnier) appeared as the *Primus inter pares*."

Besnier was punctuality personified, reaching the hospital daily at a quarter to nine. While there, he wasted no time. Each day, save for emergencies, was dedicated to the study of a particular class of cases. The days on which he examined the recent entries always brought a throng of visiting physicians, both native and foreign. Besnier was an excellent teacher, and his clinics were well attended. He considered it his duty to try new methods of treatment, but in doing so he was most cautious. It was his belief that a dermatologist should have had a good training in general medicine, should be versed in foreign languages and be familiar with laboratory procedures. Besnier was a pioneer at Saint Louis in first establishing a laboratory of histology and parasitology in connection with his service. He did much to popularize the study of skin lesions by means of histologic examination of tissue removed during life, a procedure for which he is credited with creating the term biopsy, now in general use. Besnier played an important rôle in the movement which under the influence of the Vienna school gave a preponderant part to the local treatment of skin diseases.

The year after his nomination to the Parisian hospitals at the same time as Alfred Fournier, Besnier married Miss Burat who was the niece of his teacher and friend, Dr. Henri Roger. This was a most happy union. Besnier did not care for society, but delighted in spending

all his leisure moments with his family or a few cronies. In spite of his culture, he showed only slight interest in the arts and letters, but was fond of following the progress of the sciences. He traveled little, usually spending the summer close to Paris, save for a yearly jaunt of several weeks at Trouville, where he never failed to call on his old nurse. On seeing her, we are told, his usual reserve vanished, and he threw himself into her arms in a most touching manner. He was not ashamed to stroll along the beach with this good peasant woman, who was greatly delighted at her boy's striking success.



ERNEST BESNIER
1831-1909

Besnier's stern features and piercing glance, which seemingly overlooked nothing, gave to him a rather forbidding appearance which was belied by his true character. To those who knew him he was courtesy itself, and his loyalty and desire to help them was almost without bounds. Always modest, Besnier sought no honors for himself, and accepted with reluctance a medal at the time of his retirement from Saint Louis. He was a man of the highest moral and professional standing.

Among his better known pupils may be mentioned Brocq, Sabouraud, Jacquet, Thibierge, Balzer and Leredde.

In his first series of dermatologic clinics, Brocq told of the advice given him by Besnier when he asked him about the exfoliative derma-

toses as the subject for his thesis "I shall always remember the profound astonishment of the late E. Besnier, towards the end of 1881, when a young man, without experience, just a hospital intern whom he had seen a few times in his service, asked if he had any documents to give him on the exfoliative dermatoses 'But, my dear sir,' said Besnier, 'you are indeed audacious, to choose for your thesis one of the most vexing of all dermatologic problems. Choose another subject.' This somewhat chilly reception did not discourage me, and with all the presumption of ignorance, I persisted in my project. I was not long in perceiving that the celebrated master of Saint Louis was entirely in the right."

When the time came for his retirement Besnier was still in good health, but he gave up the presidency of the French Dermatological Society and distributed his patients and books among his favorite pupils. Late in 1908, he began to fail, and about that time Madame Besnier also suffered much. He passed away May 15, 1909, in spite of the devoted care of Landouzy and Marcel Labbé. His many works perpetuate the memory of this outstanding colleague. His passing was deplored wherever dermatologists were to be found.

Editorial

THE WILLAN PORTRAITS

We publish this month a great dermatologic find which has been made by Dr John E Lane in the discovery of several pictures of Robert Willan. Two of them are copies of portraits of him in his later years and one in middle life. Willan, of course, is one of the great figures of dermatology. If he had done nothing else, he gave us the generalization, eczema, which has furnished our main occupation and subject of discussion these hundred years past. His fame is that of a dermatologist. But he also deserves to be remembered as a clinician in general medicine for his position as a teacher—Addison and Bright were his pupils—for his work on vaccination in support of Jenner, and for his pioneer work in sanitation among the poor of London. No portrait of Willan was known to exist. Lane, in his historical studies, has given us all the facts of his life. Now, through his indefatigable efforts, he has unearthed these pictures of Willan. They are a delightful historical addition to dermatology.

THE ARCHIVES OF DERMATOLOGY would like to encourage researches of this sort in the history of medicine. Information about the lives of our notables, even of the nineteenth century, is much too meager. We would be glad to see unfamiliar portraits of any of them, and to have them submitted for publication by any who happen to have copies. We should be accumulating and recording, not only the portraits, but the facts of the lives of the great masters in dermatology. Some one some day will write the history of English and American dermatology in the eighteenth and nineteenth centuries, and biographic information recorded now, where it will be available, will be invaluable for that purpose. THE ARCHIVES urges on others this avocation that Lane and Beeson are pursuing so successfully, and will be glad to have offered to it any manuscripts that result from such studies.

News and Comment

GERMAN DERMATOLOGIC SOCIETY

The sixteenth convention of the German Dermatologic Society will be held in Königsberg, Aug 5-7, 1929. The main subjects for discussion will be on the first day, investigations concerning heredity and dermatology, by Professor Kohler of Königsberg and Professor Siemens of München, on the second day, prognosis and treatment of congenital syphilis, by Prof E Hoffmann of Bonn, and on the third day, determination of cure in gonorrhea, by Genh-Rat Prof Jadassohn of Breslau. Patients will be demonstrated on Monday morning and on Tuesday afternoon. Those who desire to participate are requested to notify the local director, Prof W Scholtz, Königsberg, Pr Univ Hautklinik, Alte Pillauer-Landstr 5, mitzuteilen.

NORDISK DERMATOLOGISK FORENING

It is a pleasure to note the proceedings of the Nordisk Dermatologisk Forening meeting at Oslo, May 29 to 31, 1928. As would be expected of so vigorous an organization, it is a report of a full and complete meeting. It is interesting to see that the papers appear in French, German and many of them in English. Among the many things that one appreciates in going through the volume are the scientific and clinical thoroughness of the authors and their linguistic versatility.

DR JOSEPH GRINDON'S FIFTIETH ANNIVERSARY OF HIS PRACTICE OF DERMATOLOGY

The following resolutions were passed at the meeting of the St Louis Dermatological Society, May 8, 1929.

WHEREAS, Our beloved colleague, past president, and friend, Dr Joseph Grindon, is celebrating his Golden Jubilee of fifty years in medicine, be it

Resolved, That we as members of the St Louis Dermatological Society extend to him and his family our sincere congratulations, and be it further

Resolved, That we deeply appreciate the fact that he has given fifty years of his life to the service of mankind and of his wisdom and his masterful knowledge to the progress of dermatology.

Resolved, That a copy of these resolutions be sent to Dr Grindon, be spread on the minutes for a permanent record, and a copy be sent for publication to the ARCHIVES OF DERMATOLOGY AND SYPHILOLOGY.

ROBERT H DAVIS
NORMAN TOBIAS, Chairman
Committee

Obituary

TOWNSEND W THORNDIKE, M D
1872-1929

Dr Townsend W Thorndike died on April 5, 1929, in his fifty-seventh year. He graduated from Harvard Medical School in 1902, and early determined to devote himself to the practice of dermatology. In 1906, he was appointed assistant visiting physician for diseases of the skin in the Boston City Hospital. In 1917, he began teaching dermatology at Tufts Medical School, and for the last nine years has been professor of dermatology in that school. He was one of the founders of the New England Dermatological Society and its first vice president. He was devoted to dermatology, a man of high ideals and one whose opinions were respected by his colleagues. He was a keen student of medical history and a voracious reader, and his retentive mind gave him an ever ready fund of knowledge and facts. His tact and straight dealing in handling his subordinates made working with him a pleasure. A never failing fund of wit and humor brightened and enlivened many a meeting, and must have been a great help to his patients, as it was a source of delight to those who knew and worked with him. His death is a loss keenly felt by his colleagues.

Abstracts from Current Literature

CHRONIC ULCER OF THE LEG JOSEPH W SOOY, J A M A 92-1157 (April 6) 1929

A modified Unna's paste bandage was used in 300 cases of chronic ulcers of the leg, with complete healing in 85 per cent of the cases and satisfactory progress in the remaining. The following formula was used

Glycerin	1,900 Gm, 1,425 cc
Gelatin	625 Gm
Water	1,900 cc
Zinc oxide	250 Gm
Phenol	1 5% of total volume

4,675 Gm—10 pounds (sufficient for seven dressings)

The advantage over the original formula is that it is more porous, more antiseptic and more flexible. All the patients are ambulatory. A critical analysis is made of other methods of treatment, and the author's technic is described in detail.

THE TREATMENT OF BURNS WITH NORMAL HORSE SERUM STEPHEN R MONTEITH and RALPH O CLOCK, J A M A 92 1173 (April 6) 1929

The authors treat burns as suggested by Robinson. A temporary dressing of antiseptic ointment is applied for one day. The part is then bathed in warm physiologic solution of sodium chloride. Normal horse serum containing 0.35 per cent cresol is then sprayed on and the burned area is kept moist with this. The preliminary bath with physiologic solution of sodium chloride facilitates removal of the devitalized tissue, and prevents absorption of toxic products. Cresol, an antiseptic, prevents infection, and the horse serum coagulates the exuding tissue plasma with resultant proliferation of new healthy epidermal tissue. Five cases, with photographs, are reported in detail. Burns from any cause are treated in this manner.

SYPHILIS AMONG STATE PRISONERS L L STANLEY, J A M A 92 1238 (April 13) 1929

A statistical report on the results of the Wassermann tests on the blood made on inmates in the California State Prison at San Quentin showed that among 10,000 prisoners, 9.21 per cent reacted positively, of this number 80 per cent were white, 5 per cent negroes, 12.6 per cent Mexican and 2 per cent yellow. The percentage of positive tests among the negroes and Mexicans was more than twice that among the white persons. Twenty-four per cent of the yellow race reacted positively.

KRAUROSIS VULVAE W P GRAVES and GEORGE VAN S SMITH, J A M A 92 1244 (April 13) 1929

The authors give an extensive critical review of the literature in an effort to clarify the confusion that has arisen from an unfortunate terminology. In short, the condition begins with an irritative vulvitis, is signalized by pruritus, undergoes superficial epidermal changes in the form of leukoplakia and deeper dermal changes that result in shrinking and retraction, to terminate usually in cancer. The authors urge the use of the term kraurosis, but accept the name leukoplakic vulvitis, and they show clinically and histologically that they are both phases of an identical process.

The paper consists of an interesting historic revue, a discussion of the present day significance, a detailed histologic description and a consideration of the treatment. There are two photographs and five photomicrographs.

IS BISMUTH ABSORBED? BERNARD ERDMAN, J A M A 92 1252 (April 13) 1929

The author reports four cases, in each of which a different preparation of bismuth was used. The first patient received twenty-seven injections of bismuth subsalicylate in oil, intramuscularly. Roentgenograms taken serially, the last one 347 days after the last injection, showed bismuth still present. Potassium bismuth tartrate in oily suspension, 204 days after the last injection, was unabsorbed on roentgen examination. An unknown bismuth compound was similarly found unabsorbed 435 days after the last examination. Bismuth sodium tartrate, two months after the last injection, was completely absorbed.

CHRONIC LYMPHATIC LEUKEMIA IN TWIN BROTHERS W DAMESHEK, H F SAVIRZ and BENJAMIN ARBOR, J A M A 92 1348 (April 20) 1929

Twin brothers, identical twins, developed lymphatic leukemia at about the same time. They died within a short time of each other. A search of the literature showed several reports of cases in which the disease occurred in more than one member of the same family, but none in which it occurred in twins. The authors suggest that the possibility of an embryonic rest or anlage must be considered in the etiology, because of the almost simultaneous occurrence and death in these brothers.

RATTNER, Chicago

LICHEN PLANUS OF THE MOUTH ALONE D S W MONTGOMERY and G D CULVER, Brit J Dermat 41 45 (Feb) 1929

Montgomery and Culver comment on the rarity of the localization of lichen planus in the mouth as the sole area involved. Seventeen case reports are presented in which the characteristic picture of a buccal lichen planus was noted.

MYCOSIS FUNGOIDES P N BASU, T B MEFNON and K G PANDALAI, Brit J Dermat 41 50 (Feb) 1929

The authors present a case of mycosis fungoides d'emblée in a man, aged 60, with a discussion of the morphology of the lesions, observations at autopsy and microscopic sections. Two photographs of the patient and six photomicrographs accompany the article.

HEREDITARY HEMORRHAGIC TELANGIECTASIA WITH A NOTE ON THE AGE-INCIDENCE OF THE SKIN LESIONS S ERDHEIM, Brit J Dermat 41 55 (Feb) 1929

Five generations in a family of Anglo-Saxon stock are traced by Erdheim, and as far as he could ascertain the disease affected sixteen members, eight females and eight males, out of fifty-three. Detailed records of observations on the six who are now alive are presented, and brief notes on five deceased members are given.

A NOTE ON THE SUGGESTED TUBERCULOUS ORIGIN OF GRANULOMA ANNULARE F P WEBER, Brit J Dermat 41 67 (Feb) 1929

Weber feels that the occurrence of cases of granuloma annulare in young, otherwise healthy children before the Piquet cutireaction becomes positive for tuberculosis, should be regarded as practically negating the theory of tuberculous origin, and cites four cases to illustrate his point.

WIEN, Chicago

NINE CASES OF ERYTHEMA NODOSUM R HUGHES PARRY and E JOAN PARRY,
Brit M J 1:498 (March 16) 1929

The authors report nine cases of erythema nodosum seen in the same community in the winter of 1926, and the spring of 1927. In only four of the cases were they able to detect pyrexia. In two cases the nodules preceded the pyrexia, and in the other two, the fever had abated before the nodules appeared. In two cases there had been a definite attack of acute rheumatism, and in two others there was a family history of acute rheumatism. Marked relief from pain was obtained from local applications of methyl salicylate in the form of either liniment or ointment. A definite beneficial effect was obtained from the internal administration of sodium salicylate, and in those patients who would not tolerate the drug, the course of the disease was prolonged. In only one case was there a past history of tuberculosis in the family.

NOTES ON SOME HEMATOLOGICAL AND SEROLOGICAL INVESTIGATIONS IN
LEPROSY JOHN M HENDERSON, N K DE and S GHOSH, Indian J M
Research 16 687 (Jan) 1929

Observations were made on the specific gravity of the blood, the fragility of the red blood cells and the surface tension of the serum in cases of leprosy. The type and stage of leprosy per se had little influence on any of these phenomena. In those cases in which there was an increase in the rate of sedimentation of erythrocytes, there was also a fall in the specific gravity of the blood, and in the surface tension of the serum.

RATTNER, Chicago

BALANITIS GANGRENOSEA J GATE and J ROUSSET, Ann de dermat et syph
10 151 (Feb) 1929

The authors report two cases of localized gangrene of the penis and prepuce in which they found fusiform bacilli and spirillae associated. The condition in both cases responded readily to cauterization with silver nitrate and local antiseptics. They consider their cases as a different type from the fulminating gangrene of the genitals first described by Fournier, which is probably due to a streptococcus. In the present cases, the process showed a tendency to spontaneous limitation and cure, which does not occur in the other variety.

BISMUTH EMBOLISM WITH SEVERE CUTANEOUS LESIONS A CLINICAL AND
PATHOLOGIC STUDY A M DE CASTRO, Ann de dermat et syph 10 161
(Feb) 1929

De Castro reviews previous cases of arterial embolism following intragluteal injections of bismuth. He then records a case of his own in which there developed gangrene of the part supplied by the accidentally injected artery. Pathologic study showed bismuth in amorphous form partially blocking the arterial tree.

The symptoms of this accident and the sequence of events following it have been noted in rare cases for many years, that is, since the use of suspensions of metals injected intragluteally. The true cause of the manifestations was first determined by Freudenthal in 1923. His original work has been amply confirmed. De Castro found that the chief pathologic changes were embolism of the arteries of the derma and hypoderm, disorganization of the sebaceous glands and dilatation of the papillary capillaries.

AN ERUPTIVE TRIAD CAUSED BY THE SAP OF TREES L A LONGIN, Ann de
dermat et syph 10 178 (Feb) 1929

For many years the author has observed a dermatitis occurring principally among wood-choppers and those who handle freshly hewn wood. This dermatitis seems to be provoked by some constituent of the sap. The eruption affects the face, hands and genitals as an erythematous, erythematopapular or vesicular and exudative dermatitis. The causative substance is, apparently, very volatile, those

affected seem to have a specific sensitivity to it. So far, the author has noted the condition only in men. Exclusion of the cause and local applications suitable to the type of dermatitis present produce rapid involution.

A CONTRIBUTION TO THE STUDY OF CARCINOMA ARISING ON LUPUS VULGARIS
W J MRONGOVIVS, *Ann de dermat et syph* **10** 186 (Feb) 1929

The author discusses the origin of carcinoma in lupus vulgaris. He has seen this development only twice in about 200 cases, other authors report it in from 16 to 4 per cent of their cases. Roentgenotherapy has been suggested as a possible factor in the malignant change, but in only twenty-three of the eighty-five cases collected by the author from the literature has this treatment been given. Other factors may account from the relative frequency of malignant change in lupus, namely, the long continued destructive treatment usually employed and the residual infection often seen in an apparently completely healed cicatrix. Again, it has been shown that the lupus cicatrix contains masses of enclosed epithelial cells, and it is probable that cancer originates in one or more of these imprisoned masses.

One of the two cases of the author is reported in some detail. The patient in this case had a malignant ulcer of the upper lip. This part was the site of active lupus vulgaris, which had been healed in adjacent areas by roentgen treatment. The author apparently absolves the roentgen rays from blame for the malignant change in his case.

CUTANEOUS AND MUSCULAR ATROPHY OF THE SCAPULOHUMERAL REGION
A SEZARY and A DURUY, *Bull Soc franç de dermat et syph* **36** 60, 1929

A girl, aged 20, presented a polymorphous eruption consisting of erythematous and pigmented patches, telangiectasia and several round, slightly infiltrated, depigmented lesions which were limited to the left scapular and humeral region. The condition had been present for seven years. There was muscular atrophy of the same area. The cutaneous lesions were unclassifiable, although microscopic examination indicated pseudanthoma elasticum. The myopathy, likewise, was difficult to classify. As the patient showed a partially positive reaction in the cerebrospinal fluid, the authors proposed to institute antisyphilitic treatment.

BILATERAL PALMAR KERATODERMA FOLLOWING THE INJECTION OF GOLD SALTS
GOUGEROT and BURNIER, *Bull Soc franç de dermat et syph* **36** 64, 1929

A case of acquired keratoderma of the palms, following three injections of a gold salt, is reported briefly.

PREMYCOTIC PIGMENTED ERITHRODERMA GOUGEROT and BURNIER, *Bull Soc franç de dermat et syph* **36** 69, 1929

The interesting feature of this case was a diffuse, uniform, brownish pigmentation associated with an erythematous squamous premycotic eruption.

POIKILODERMA BEGINNING AS PARAPSORIASIS GOUGEROT and BURNIER, *Bull Soc franç de dermat et syph* **36** 71, 1929

The interesting feature of this case was that sixteen years previously the patient had had a clinically typical parapsoriasis en plaque. Poikiloderma appeared about three years before the present condition.

PRECOCIOUS MALIGNANT SYPHILIS WITH GANGRENE OF THE FEET M PIVARD, P VERNIER and M ABRICOSOFF, *Bull Soc franç de dermat et syph* **36** 73, 1929

The patient presented ulcerative and macular syphilids two months after the appearance of a genital chancre. In addition, gangrene of the feet developed probably from syphilitic arteritis and alcoholism.

LINEAR HYPERTRICHOSIS OVER A VEIN WHICH HAD BECOME THROMBOTIC FROM INTRAVENOUS INJECTIONS LOUSTE and LÉVY-FRANCKEL, Bull Soc franç de dermat et syph **36** 77, 1929

Three intravenous injections of sodium salicylate produced venous sclerosis. Over the sclerosed vein a band of pigmentation with hypertrichosis appeared.

COMPARATIVE ACTION OF PILOCARPINE AND ACETYLCHOLINE IN TWO CASES OF SCLERODERMA, ONE ASSOCIATED WITH RAYNAUD'S DISEASE GAUCH, SOHIER AND COURREGES, Bull Soc franç de dermat et syph **36** 78, 1929

The authors describe two cases of scleroderma, in one of which Raynaud's disease was present. Pilocarpine improved the sclerodermatous changes in both cases, while acetylcholine improved the case of Raynaud's disease, but was without influence on the scleroderma.

DERMATITIS MEDICAMENTOSA FOLLOWING ERYTHEMA SOLARE C SIMON and COIGNERAI, Bull Soc franç de dermat et syph **36**.84, 1929

The patient presented a polymorphous dermatitis on the extremities, where she had been previously sunburned. As she had taken several drugs, including mercury and iodides, the medicine that provoked the dermatitis could not be determined definitely.

CONTRIBUTION TO THE RESEARCHES OF BODIN AND CHEVREL ON THE ETIOLOGY OF MYCOSIS FUNGOIDES HISSARD, Bull Soc franç de dermat et syph **36** 87, 1929

During 1926, Bodin and Chevrel reported the isolation of a bacillus (under special cultural conditions) from a case of mycosis fungoides. The present report concerns certain biologic reactions obtained in three cases of mycosis fungoides. In these cases, blood cultures were negative and inoculation of guinea-pigs likewise. One case showed agglutination of the bacillus in 1:50 dilution. Two of the cases gave positive complement-fixation reactions, one was negative. The author thinks that further investigations should be undertaken to prove or disprove the relation of the Bodin-Chevrel organism to the disease.

A CASE OF GENERALIZED LICHEN PLANUS CURED BY RADIATION OF THE AXILLA (PERI-ARTERIAL SYMPATHETIC RADIOTHERAPY) J GOUIN and A BIENVENUE, Bull Soc franç de dermat et syph **36** 96, 1929

In a child, aged 10, with lichen planus, the author obtained a cure by a single irradiation of the right axilla. He reiterates his former opinion that so-called spinal irradiation (medullary and radicular) is in reality irradiation of the sympathetic system so far as the effects evoked are concerned. The present case is cited as proof of the hypothesis.

THE INFLUENCE OF MALARIA THERAPY ON THE WASSERMANN, SACHS-GEORGI, MEINICKE AND VERNES REACTIONS A SCHOCH, Bull Soc franç de dermat et syph **36** 100, 1929

These tests were performed on twenty-five patients with active cutaneous syphilis and syphilis of the nervous system in whom malaria therapy was instituted. The article contains detailed observations and cannot be abstracted satisfactorily, but the author concludes with the statement that the diagnosis and therapy in syphilis should not be based on the result of any one reaction, several procedures, which fortunately complement each other, should be employed.

CHRONIC ONYCHIA AND PARONYCHIA IN A PATIENT WITH TERTIARY SYPHILIS A KOSTOULAS, Bull Soc franç de dermat et syph **36** 112, 1929

A case of paronychia that was extremely obstinate to treatment is described. The patient had received prolonged antisyphilitic treatment with the achievement of latency or cure.

A NEW METHOD OF DESENSITIZATION "AUTO-OUROTHERAPY" IN THE CURE OF ECZEMA JAUSION and PALLOLOGUE, Bull Soc franç de dermat et syph **36** 115, 1929

This method consists in the repeated subcutaneous injection of the patient's urine, preferably sterilized by phenol. The authors base the method on the conception that the urine contains the endogenous antigens which provoke eczemas of internal origin. The results were satisfactory.

UNIVERSAL PSORIASIS ARTHROPATHICA BEGINNING AS A CHRONIC EXFOLIATIVE DERMATITIS A SEZARY and A DURUY, Bull Soc franç de dermat et syph **36** 119, 1929

While the patient had never presented discrete lesions of psoriasis, biopsy verified the diagnosis of that disorder in an apparently classic case of the Wilson-Brocq type of exfoliative dermatitis.

TREATMENT OF LUPUS ERYTHEMATOSUS DISSEMINATUS BY GOLD SALTS HUDELO, RABUT and GUEX, Bull Soc franç de dermat et syph **36** 122, 1929

In a case of this disease, treatment with gold salts led to activation of the disease and a fatal termination.

SUCCESSFUL TREATMENT OF PRURIGO GESTATIONIS BY INTRAVENOUS INJECTIONS OF BROMIDE GIACARDI and BETBEZE, Bull Soc franç de dermat et syph **36** 125, 1929

After four injections of strontium bromide (10 cc of a 10 per cent solution), complete relief was obtained.

TREATMENT FOR ACNE BY BACTERIOPHAGE P BLUM and E PEYRE, Bull Soc franç de dermat et syph **36** 127, 1929

In severe cases of pustular acne, the authors report favorable effects from the employment of a polyvalent bacteriophage. Injections of bacteriophage were made into the individual lesions and compresses of it were applied.

MICHAEL, Houston, Texas

SCLEREMA NEONATORUM V C DEMEL, Arch ital di dermat, sifil **4** 81 (Oct) 1928

The author reports a case of this condition in a girl, aged 9 days. At necropsy multiple foci of inflammation were found in the skin and in the muscles. The thyroid, thymus and suprarenal glands showed degenerative changes. The author calls attention to the inflammation of the muscles and believes that at least some cases of sclerema of the new-born infant should be classified as multiple myositis.

MULTIPLE CARCINOMA OF THE SKIN E FREUND, Gior ital di dermat e sifil **69** 1525 (Dec) 1928

The author reports three cases of multiple cancer of the skin of the type described by Arning, with lesions on the chest, dorsum, abdomen and forearms, one case of basocellular solitary epithelioma and one case of epithelial degeneration of a senile wart. In all cases the evolution of the lesions extended from two to twenty years.

HYPERGLYCEMIA IN SKIN DISEASES L MANNINO, Gior ital di dermat e sifil **69** 1603 (Dec) 1928

The author describes the various methods of sugar determination in the blood. In his experience Cruto's method is the best. This method is based on the reduction of potassium iodide by means of ramosum oxide produced when dextrose

acts on Fehling's solution In fifty-two cases of skin disease including psoriasis, eczema, lupus vulgaris, lupus erythematosus, xeroderma, pityriasis rosea, cancer, Duhring's disease, leprosy, tinea, sarcoid and pruritus, he has not found any alteration of the sugar-regulating function of the liver According to the author, the disturbance of sugar metabolism found by some investigators in skin diseases is a coincident phenomenon in no way related to the existing dermatosis

PARDO-CASTELLO, Havana

DERMATOLOGIC ABSTRACTS

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

ROENTGEN TREATMENT FOR ACUTE CERVICAL LYMPHADENITIS L C ROSENBERG, *Am J Dis Child* **37** 529 (March) 1929

Eighty patients with acute cervical lymphadenitis have been treated by Rosenberg with roentgen irradiation All these cases occurred in children under 7 years of age, and the disease was secondary to infections of the upper respiratory tract The cases included were not due to buccal infection, carious teeth, infections of the scalp, eczema, retropharyngeal abscess, tuberculosis of the glands or infectious mononucleosis The inflammation occurred invariably in the superior deep cervical nodes Moreover, all cases selected for this series were considered potentially suppurative, mild cases being excluded No auxiliary treatment of any kind was used, reliance was placed on irradiation as the sole therapeutic measures In twelve patients suppuration developed, in the remaining sixty-eight patients (85 per cent), the inflammation subsided completely without surgical intervention Rosenberg asserts that every patient with acute cervical lymphadenitis and a high temperature should be treated by roentgen irradiation, for by this method there is everything to be gained and nothing to be lost An unfavorable effect from such treatment is not reported in any case

HEREDITARY TYPE OF ANGIONEUROTIC EDEMA H F DUNLAP and W S LEMON, *Am J M Sc* **177** 259 (Feb) 1929

The case reported by Dunlap and Lemon occurred in a family consisting of twenty-four members representing four generations Six members of this family probably affected with the disease died suddenly, two of undoubted edema of the glottis, two of obscure gastro-intestinal colic, one of dropsy and one of heart disease In this respect the family does not differ from the twenty-one others that have been described in the literature Three cases of angioneurotic edema or urticaria, although not of the familial type, are also reported because of the diversity of symptoms and the special studies which were carried out on blood volume and the type of capillaries

VALUE OF METHYLENE BLUE-GENTIAN VIOLET 5 PER CENT IN PREOPERATIVE SKIN PREPARATION K ROBERTS, *Ann Surg* **89** 183 (Feb) 1929

Experimental and clinical results have convinced Roberts that a solution containing 5 per cent commercial methylene blue (methythionine chloride, U S P) crystals, 5 per cent commercial gentian violet crystals in 50 per cent commercial grain alcohol (named by him MBGV5) is superior to ether, to 2 per cent mercurochrome in aqueous solution, to 3 per cent trinitrophenol, and to 2 per cent iodine in alcohol as an antiseptic for the preoperative preparation of the skin It kills the common skin containing organisms immediately It will retain its ability to sterilize for at least two and one-half hours It is readily visible It is nontoxic and nonirritating to the skin It does not interfere with the reparative processes

It is stable for at least a month. It did not interfere with the physiology of the skin in 277 clean abdominal cases in which MBGV5 following an ether scrub was used as a skin preparation, only three patients became infected. In each case a definite known reason other than failure of the antiseptic was the cause of the infection.

THALLIUM MEDICATION IN TINEA CAPITIS AND OTHER DERMATOSES REQUIRING EPILATION E W ABRAMOWITZ, New York State J Med **29** 253 (March 1) 1929

Abramowitz reviews the literature briefly and reports his experience with this drug in eighteen cases of tinea capitis. The dose was 8 mg of thallium acetate per kilogram of body weight. The total dose of the drug varied from 90 to 212 mg. It did not always correspond to the age of the patient. The prescribed quantity of the drug administered by mouth was given once only and never repeated. Epilation started from the tenth to the nineteenth day, averaging fourteen days after administration of the treatment. The eyebrows and hair in other parts of the body were never affected. Regrowth in seven cases began after from twenty-eight to forty-six days, or an average of thirty-six days after treatment. A number of adults with favus of the scalp, hypertrichosis and alopecia areata and other types of baldness were also treated.

TREATMENT OF EPIDERMOPHYTOSIS OF TOES (MANGO TOE) AND OTHER FORMS OF EPIDERMOPHYTOSIS BY FUCHSIN PAINT A CASTELLANI, J Trop Med **32** 77 (March 15) 1929

The fuchsin paint first described by Castellani in 1924 has the following formula. Saturated alcoholic solution of basic fuchsin, 10 cc, 5 per cent aqueous phenol solution, 100 cc. This mixture is filtered and 1 Gm of boric acid is added. After two hours 5 cc of acetone is added, and two hours later 10 Gm of resorcin. The paint should be kept in a dark-colored bottle with a glass stopper. The paint is the ordinary carbolfuchsin used in bacteriologic laboratories for staining tubercle bacilli, to which 1 per cent boric acid, 5 per cent acetone and 10 per cent resorcin have been added. As a matter of fact, simple carbolfuchsin alone gives good results, but the addition of the boric acid and the acetone seems to enhance its action and make it more penetrating, and resorcin certainly increases its efficacy in most cases. It is applied daily to the affected parts with a small wad of cotton wool or a small sponge, in some cases several times a time, or every other day or twice a week, if very acute eczematoid symptoms are present it may be diluted with the same amount of water, but usually it may be safely applied undiluted even to the most acute eczematoid conditions provided they are of true epidermophytic origin.

METASTASES IN MAMMARY CARCINOMA F T INGRAM, Brit M J **1** 201 (Feb 2) 1929

Ingram reports a case of scirrhus carcinoma of the breast with metastases to the nail fold of the left middle finger. Six months after its removal there was no sign of any recurrence in the breast, axilla or anywhere else. A few days later, however, the patient complained of severe headache round about what looked like a suppurating wen in the right parietal region. This turned out to be a hard, soiled and not very vascular mass, moving freely with the scalp, and certainly not a wen. Since then she has had almost continuous headache, with intermittent attacks of vomiting. Neither the thorax nor the abdomen shows any abnormality.

VALUE OF HINTON TEST IN SERUM DIAGNOSIS OF SYPHILIS J H FERGUSON and E C GREENFIELD, Brit M J **1** 495 (March 16) 1929

The Hinton test is an agglutination, by syphilitic serums, of a suspension of cholesterol in glycerinated hypertonic saline solution containing a mere trace of the alcohol-soluble, ether-insoluble extractives of beef muscle. The addition of the

glycerol is the main feature of difference from the Kahn, Sachs-Georgi, Sigma, Meinecke, and other "flocculation" methods of diagnosing syphilitic serums. A positive reading consists in a definite "agglutination" of the cholesterol suspension into more or less coarse clumps, with a complete clearing of the medium. A good positive reading in at least one tube (generally the first) constitutes a positive diagnosis of syphilis. Ferguson and Greenfield have modified the technic somewhat, so that the readings are for the most part clearcut. Zone phenomena are infrequent and obvious. There are indications that the test is somewhat more sensitive and more reliable than the Kahn test. It is not comparable in reliability with a carefully standardized Wassermann technic, such as the number 4 method of the Medical Research Committee, but it would appear to pick out certain types of cases, especially "treated" cases and the controversial "latent" cases, when the Wassermann test at times fails. In the absence of other evidence a diagnosis of syphilis is not to be made on the Hinton (or for that matter any flocculation reaction) alone, whereas a repeated good positive Wassermann reaction does not appear to have that significance. In short, the Hinton, like the Kahn, must be reserved as supplementary to the Wassermann.

RÔLE OF ROENTGEN RAYS IN PATHOGENESIS OF CANCEROUS DEGENERATION OF LUPUS W. J. MRONGOVIVS, *Ann de dermat et syph* **10**:186 (Feb) 1929

Mrongovius thinks that the rôle attributed to roentgen rays in the pathogenesis of the cancerous degeneration of lupus has been exaggerated. Among eighty-five patients with carcinomatous degeneration of lupus seen by him, there were only twenty-three who had previously been treated by roentgen rays, and the irradiation had been given from six to fifty years before the beginning of the cancer, the majority of the patients had been previously treated with Finsen light, pyrogallol and resorcin. The frequency of this type of degeneration depends probably on the nature of the cicatrix of the healed lupus, in which there were found not only superficial but even deeply situated areas of proliferated epithelium.

INSENSIBLE PERSPIRATION IN CHILD TREATED WITH ULTRAVIOLET RAYS E. FANTON, *Clin pediat* **11** 55 (Jan) 1929

Fanton reports the results of his researches on fourteen children. He concludes that irradiations of the whole body with ultraviolet rays provoke usually an increase of perspiration, either immediately or some time later, the average hourly loss of water after a series of treatments remains sensibly higher than it was before the irradiations. This effect of ultraviolet rays on the organism is not transitory, on measuring the perspiration in certain subjects after from five to fifteen days following the irradiation an average hourly loss of water was noted that was frankly higher than was observed before irradiation.

ANTISYPHILITIC TREATMENT OF PREGNANT WOMEN E. KLAFTEN, *Arch f Gynak* **135** 620 (Feb) 1929

Klaften believes that the antisyphilitic treatment of pregnant women reduces the number of recurrences during pregnancy and results in a larger number of living and healthy infants. He emphasizes the fact that with regard to the fate of the child, treatment during pregnancy is of greater importance than treatment before pregnancy. Treatment during the last twelve weeks of pregnancy is particularly important because most infections occur in this period. The best results, however, are obtained when the mother is treated both before and during pregnancy.

NEW SYPHILIS REACTION (MEINICKE "CLARIFICATION" REACTION) E. MEINICKE, *Klin Wchnschr* **8**:112 (Jan 15) 1929

Meinicke describes a new reaction for syphilis. To differentiate it from his other test method which he called the Meinicke turbidity reaction, he designates this one as the Meinicke clarification reaction. For both tests he uses tolu. For

the clarification reaction, however, he uses three times as much as in the turbidity test. Instead of using extracts from the hearts of horses he uses bovine extracts. The characteristic of this reaction is that the original opaque mixture becomes clear when the reaction is positive. It remains turbid if it is negative. The test tubes containing the completed mixture should be left from eighteen to twenty hours at a temperature of about 68 F. Meinicke asserts that the results can be read with the naked eye by holding the tube toward the light.

CAUSES OF PRURITUS VULVAE A. LABHARDT, Zentralbl f Gynak **53** 197 (Jan 26) 1929

Labhardt recognizes three causes for this disease: (1) symptomatic pruritus in local disturbances of the vulva (vulvitis, maceration by leukorrhea) or in general disease (diabetes, cholemia), (2) ovariogenic pruritus with leukoplakia, and (3) neurogenic and psychogenic pruritus. Contrary to the opinion of some authors, Labhardt believes that the itching is a consequence of leukoplakia, which often appears alone. Among twenty-seven women observed by him, eighteen were in the climacteric, the remaining nine were hypomenorrheic or oligomenorrheic, only three were normal. Thus it is evident that ovarian hypofunction is closely related to leukoplakia. Among the twenty-seven patients, ten had diabetes.

SUMMARY OF EXPERIENCES WITH TAR CANCER AND WITH CANCER IN SCARS F. BANG, Hospitalstid **71** 1341 (Dec 13) 1928

Bang considers the relation between the cell and its canceration. He designates the development that a normal cell undergoes to acquire the characteristics of a malignant cell as "increase in virulence," a cell being virulent, i. e., malignant, when by division it becomes able to invade the surrounding tissue. The more often the cell divides, the sooner it attains this ability. As the tissue offers a certain resistance to invasion, canceration depends on (1) sufficient stimulation to cell division and (2) local weakening of the tissue to be invaded. If the resistance is lowered or the half virulent cells are stimulated still further to division, "latent cancer" appears. Age, intercurrent disorders, nervous influences, continued influence of the cancerigenic agent, possibly endogenous influences, are considered as weakening factors, and influences of widely different kinds, including mechanical influences, as irritants to division. Certain local pathologic conditions must play a part in the development of cancer. The life time of the normal cell and the number of divisions which the cell must undergo before becoming malignant are believed to vary with the kind of animal. The local and general predisposition of the individual to cancer then depends on the sum of these and other similar factors. The applicability of these views on the pathogenesis of cancer in explanation of hitherto unexplained phenomena in the cancer theory, such as "acute and latent cancer," carcinosarcomas, and the action of roentgen rays and of radium in both causing and curing cancer, is regarded as a criterion of the tenability of the theory. The differences in the various influences on the tissue which result in the same pathologic process are reconciled by classifying them as influences which (1) stimulate to division and (2) break down the resistance of the cells.

PRIMARY SCLEROSIS IN AXILLA I. DAINOW, Schweiz med Wchnschr **59** 158 (Feb 16) 1929

Among 318 patients with primary syphilitic infections, Dainow observed only five with extragenital chancres. He reports one case as of special interest. A primary chancre was found in the axilla. The microscopic examination showed *Spinochacta pallida* in unusually large numbers. The Wassermann reaction was positive. A general examination also revealed a syphilitic roseola. This case was characterized by a high degree of infectiousness. Even the perspiration contained large numbers of spirochetes.

Society Transactions

BROOKLYN DERMATOLOGICAL SOCIETY

A. PERSKY, M.D., *Secretary*

Regular Meeting, December 17, 1928

WILLIAM H. BEST, M.D., *Presiding*

DERMATITIS LICHENOIDES CHRONICA ATROPHICANS Presented by DR. WALZER

J. K., a man, aged 50, had an eruption of about five years' duration. The lesions started on the back of the neck and gradually spread to the abdomen and over the extremities as discrete and grouped papules. The elementary lesion was a papule. In some instances it was covered with a scale and surrounded by a faint areola. The papules increased in size, the centers becoming atrophic and white, and the borders slightly raised. The individual lesions formed groups surrounded by an erythematous halo, or, in some instances, by a brown, pigmented border. The patches were not infiltrated, and could be wrinkled. On raising the surface of the lesion with the point of a pin, a moist, oozing, depressed area became visible. No lesions were found on the palms, soles or in the mouth.

DISCUSSION

DR. WALZER: This case falls in one of the groups that have until recently been called either lichen atrophicus or morphea guttata. There is at present, however, a tendency to form an additional group, namely, dermatitis lichenoides chronica atrophicans, of which this case is one. In lichen atrophicus, the patient must demonstrate a typical lichen papule. It can then be assumed that the atrophy is an end-result of the lichen. In morphea guttata, the condition must be one of scleroderma—beginning as such, and ending as atrophy. This case begins as a papule, which is lichenoid, but not lichen planus. It undergoes changes which end in atrophy. On raising the atrophic skin over a lesion, with the point of a pin, a moist oozing surface is seen—a condition not seen in morphea.

There is no typical histologic picture found in this disease. The diagnosis is based wholly on clinical grounds, and just as the name implies, it is a chronic lichenoid dermatitis, which ends in atrophy.

LUPUS VULGARIS SERPIGINOSUS Presented by DR. SKEER

G. S., a woman, aged 44, married, a native of Russia, presented a serpiginous lesion 10 cm. in size, situated midway between the elbow and the wrist on the radial side of the left forearm. The margin of this lesion consisted of brown, slightly elevated nodules, the size of a pea, which became confluent and formed a serpiginous outline. The center was clear except for an area 2 cm. in diameter, which was atrophic, telangiectatic and seemed adherent to the bone. She had received roentgen treatment to this area about twelve years previously. On the ulna side of the forearm was a pea-sized nodule of ten months' duration which was excised for study. The duration of the eruption was fifteen years. The blood pressure and blood chemistry were normal. The reactions to the Wassermann test of the blood and the Kahn test were negative. Roentgen examinations of the lungs did not disclose any pathologic changes.

LICHEN PLANUS HYPERTROPHICUS (?) Presented by DR. SKEER

M. C., a woman, aged 34, born in Poland, presented a palm-sized, nodular patch of verrucous-like lesions on the inner side of the right leg, just above the malleolus. The lesions were violaceous, and covered with fine scales.

The patient also presented a hyperkeratotic lesion on each knee, the result of washing floors while on her knees. The reactions to the Wassermann and Kahn tests were negative.

A biopsy was done and will be reported at the next meeting.

DISCUSSION

DR GRAHAM I do not think this is lichen planus. On the lower part of the legs all chronic lesions have a tendency to hypertrophy. On account of the large varicose veins present I am inclined to call this a hypertrophic type of varicose eczema.

DR GAUVAIN I am inclined to agree with Dr Graham that this is just a chronic verrucous eczema, which has become hypertrophic.

DR ABRAMOWITZ I agree with the diagnosis of hypertrophic lichen planus. I would remove the scales with a 20 per cent salicylic acid plaster, and when this has been accomplished I would treat what remains of the infiltrated patch with subintensive filtered doses of roentgen rays.

LICHEN PLANUS IN A COLORED CHILD Presented by DR FRANK

A B, a boy, aged 5½, colored, born in the United States, had an eruption which started on the right leg about six weeks previous to presentation and gradually became generalized. His past history was irrelevant. The patient presented a generalized symmetrical rash made up of angular, flat, sharply outlined, violaceous papules the size of a pinhead, many of these were umbilicated. The mucous membrane of the mouth showed no lesions. The eruption had not occurred on the scalp, face, hands and feet.

EPITHELIOMA AND LEUKOPLAKIA Presented by DR WALZER

C H, a man, married, aged 58, a painter, had had a sore in his mouth for about three months. There was no history of syphilis. He had never been sick before. At one time he had been a heavy smoker, but he had neither smoked nor chewed tobacco during the last sixteen years.

He presented for examination on the inner sides of both cheeks, extending from the commissures, patches of leukoplakia. On the inner side of the left cheek, beginning at the edge of the leukoplakia, was an ulcer the size of a penny, with a sharp, raised and inverted border. The floor was uneven, but clean, and when taken between the fingers it was found to be indurated. The teeth on that side of the mouth were normal. On the same side of the neck was a walnut-sized, hard, sharply outlined gland, not tender, and with no involvement of the overlying skin.

DISCUSSION

DR SKEER I believe this to be an epithelioma, highly malignant in form, because of its clinical appearance and the glandular involvement. If it was a gumma, I think it would be more purulent, and the edges not so well defined. Of course, a Wassermann test should be done, but I consider it to be an epithelioma.

DR BEST I agree with the diagnosis of epithelioma. The enlarged, painless, submental glands help to confirm this diagnosis. In this severe malignant type one gets early metastasis. Even a positive Wassermann test would not cause me to change the diagnosis.

LICHEN PLANUS AND FOLLICULITIS DECALVANS Presented by DR BEST

G H, a man, white, aged 55, a musician, had had an eruption for one year. The rash first appeared on the abdomen, and spread slowly over the trunk and the upper and lower extremities. There was considerable itching. The condition of the scalp started about four months previous to presentation. The past history was negative. He said that he had not had venereal infections. An examination disclosed a generalized eruption on the trunk and the upper and lower extremities.

The lesions were confluent and discrete flat papules, the size of a pinhead. Some of them were slightly glistening, and, where the eruption was confluent, there was a suggestion of a violaceous color. The scalp showed areas of alopecia, and the skin was atrophic and scarred in spots. There were follicular pustules at the margins of these areas.

The pathologic report was as follows. A biopsy from the back showed that the section consisted of skin and subcutis. The epidermis was umbilicated. There was flattening of the papillary pegs. The derma showed dense invasion with various types of cells which belonged to the histocyte group. In areas, the stratum corneum showed condensation, causing it to appear prominent, almost as a hyaline membrane. There were focal infiltrations of histocytes in the pars reticularis and around the coil gland ducts. The diagnosis was lichen planus.

DISCUSSION

DR ABRAMOWITZ. I regard the lesions on the backs of the hands as flat warts. The eruption on the body is profuse, arranged in broad linear bands and scaly. The individual papular lesions are suggestive of lichen planus, but the eruption probably represents the lichenoid type of parapsoriasis. The atrophic patches on the scalp and the telangiectasis of the forehead suggest roentgen ray or radium sequelae.

DR GAUVAIN. I agree with Dr Abramowitz that the lesions on the hand are verruca. While the lesions are flat, they are much too large for lichen planus papules. I believe that fulguration offers the best method of treatment.

DR WALZER. I would consider this a case of lichen planus hypertrophicus, not a case of lichen planus. The patient has not a single lesion that is a lichen planus papule. He does, however, show lichenoid lesions. I saw this patient at the Good Samaritan Dispensary, but at that time he was in a much better condition than at the present time. He then showed what he shows now, lichenoid lesions, and in some locations, the lesions gave the suggestion of psoriasis. The scalp at that time showed old scars but no acute lesions. At that time I considered it a fairly typical case of parapsoriasis of the lichenoid type. At present he still has a parapsoriasis but with a superimposed secondary, marked dermatitis.

DR BEST. I agree that it is not a typical lichen planus. However, I can think of no other dermatosis which would come any closer to resembling this condition. Lichen planus does not explain the condition of the scalp. The scalp shows a pustular folliculitis with atrophy and scarring and patchy alopecia, which symptom-complex suggests a diagnosis of folliculitis decalvans.

A. M. PERSKY, M.D., *Secretary*

Regular Meeting, Jan 21, 1929

W. H. BEST, M.D., *Presiding*

LEUKOPLAKIA WITH ULCERATION. Presented by DR WALZER.

C. H., was shown at the December meeting of the Society with a diagnosis of epithelioma. The diagnosis at that time was accepted by most of the members. The condition has improved since the last presentation. Pus was obtained from the enlarged cervical gland. The treatment consisted of hygienic measures.

DISCUSSION

DR BEST. I am not willing to relinquish the diagnosis of epithelioma that I made last month. There is a definite elevated border, which leads me to think of epitheliomatous degeneration of syphilitic leukoplakia. I would be convinced otherwise only by a microscopic examination of the tissue.

DR SKEER In spite of the improvement, the diagnosis of epithelioma is still to be kept in view

DR GAUVAIN In the discussion of this case at the previous meeting I expressed the view that the ulceration was caused by the poor hygiene of the mouth. At the present time the patient shows a much healthier condition of the gums, and the ulceration has disappeared, leaving only a superficial erosion of the membrane. Surely the condition on which a diagnosis of epithelioma was made a month ago is not present now.

DR ABRAMOWITZ Any ulceration that develops in a patch of leukoplakia should be considered as malignant until proved to the contrary by biopsy. I think it is dangerous to delay this simple procedure any longer, for I believe it is still an epithelioma.

DR CHARGIN This patient shows a mass, raised above the level of the mucous membrane, and located on leukoplakia. The lesion is hard and is irregular. It is apparently an epithelioma. The importance in this case is the therapy. Some will advise applications of radium to the lesion and roentgen treatment for the gland of the neck, others, surgical measures, i. e., excision, and a third group, cautery and x-rays. I think that the last method offers the best outlook.

DR WALZER I believe the lesion is a simple ulceration on a leukoplakia, and that it will in all probability disappear.

MORPHEA Presented by DR WALZER

J. K., a man, aged 23, single, the youngest of three brothers and sisters, said that he had never been sick. The patient claimed that the first lesion on the forehead appeared when he was 20 years of age, the lesion on the nose when he was 18 and the lesion in the left nasolabial fold about six months before presentation. He did not know the duration of the other lesions.

On the left side of the forehead was a longitudinal white patch, surrounded by a faintly bluish border. It was about 2 inches (5.08 cm) long by $\frac{1}{2}$ inch (1.27 mm) wide. The patch was somewhat depressed, and ivory white. Similar lesions were found over the tip of the nose, the left nasolabial fold, the neck and over the sacrum.

ERYTHEMA MULTIFORME Presented by DR GAUVAIN

L. T., a married woman, aged 19, exhibited an eruption over the face, neck, body and upper extremities, with only a few lesions on the lower extremities. The lesions were erythematous, edematous and violaceous and varied in size from that of a bean to that of a hazelnut. Many of the lesions, particularly on the back, were surmounted by superficial bullae. The face was markedly edematous, particularly about the lips. On the body the lesions were generally distributed over the back, but in front they formed half rings around the breasts, gradually disappearing from the median line toward the axillae. When seen two days later, or two days before presentation, the lesions were less vivid and the bullae had all ruptured, leaving only exfoliation.

The patient had had a similar attack previously, which lasted four weeks, and from which she had recovered four weeks before the onset of the present eruption. She had not taken any drugs.

DISCUSSION

DR BERKOWITZ This is a toxic eruption, due probably to a drug.

DR ABRAMOWITZ From Dr Gauvain's description of the development of the rash as well as the appearance of the lesions as presented, the diagnosis of an eruption produced by phenolphthalein is almost a certainty. A test dose of the drug should definitely decide whether this diagnosis is correct or not.

DR SKEER I would say this is a case of erythema multiforme bullosum.

DR WALZER I think this can be classified as an eruption caused by phenolphthalein because of the recurrent attacks and pigmentation and, also, because the patient has taken "anala."

DR GAUVAIN When I first saw this patient a few days ago, having in mind an eruption produced by phenolphthalein, I inquired carefully about ingestion of such a drug. The patient was nervous and excitable and denied having taken any drugs.

I shall try to keep track of her, and administer phenolphthalein to provoke another attack, as I am willing to accept the diagnosis of an eruption caused by this drug.

CASE FOR DIAGNOSIS (PITYRIASIS ROSEA?) Presented by DR GAUVAIN

J C, a boy, aged 7, had an eruption on the arms, which began about three weeks before presentation. It then appeared on the chest and back, later on the neck and chin. These lesions, which caused some itching, were red papules forming large and small ovals with their long diameters in the planes of cleavage of the body. They were infiltrated, and surmounted by scales, some of which were yellowish and greasy, others white and dry. Removal of the scales from some of the lesions produced small, punctate hemorrhagic spots.

DISCUSSION

DR WALZER While the condition is probably pityriasis rosea, I have another suggestion to offer. Some of the lesions on the back of the neck and forearms have sharp, elevated borders, so much so that they are strongly suggestive of a possible tinea circinata.

DR BEST I would say that the condition is pityriasis rosea.

DR ABRAMOWITZ The most probable diagnosis is pityriasis rosea. Further observation of this patient is necessary. If the lesions disappear shortly, no other diagnosis need be entertained.

MULTIPLE BASAL CELL EPITHELIOMA Presented by DR GRAHAM

Mrs E J, aged 52, was born in Norway and had been living in this country for twenty-five years. She had never been exposed to the sun to any extent but became sunburned easily. Otherwise, her history was negative until four years before presentation. At that time the presenter removed a basal cell epithelioma from the right cheek with radium, the scar of which was present. Since then other epitheliomas developed and were scattered over the face, forehead and the left cheek. These lesions varied in size from that of a pin head to that of a dime. None of them were ulcerated, but all presented the typical rolled margin. A biopsy had not been done. The patient was presented for a discussion as to the proper treatment of these lesions.

DISCUSSION

DR ABRAMOWITZ I am almost certain that Dr Graham will receive more than one suggestion on how to treat this particular type of basal cell epithelioma from the members. Personally, I would use the x-rays because it is a painless method, and the cosmetic result would be good for comparative results. Desiccation may be tried on one of the smaller lesions.

DR SKEER I would destroy these lesions with endothermy followed by at least two units of x-rays.

DR BERKOWITZ I use electrodesiccation in preference to radium. I think the lesions should be removed in several sittings.

DR WALZER I would use electro-desiccation, followed by radium or x-rays. I would do one lesion at a time.

DR GAUVAIN I think all these lesions can best be removed by electro-desiccation. I do not think radium is necessary at all.

DR GRAHAM I appreciate the discussion in this case very much. I use radium in the treatment of all of my patients with basal cell epithelioma as a regular routine procedure, however, I do not believe that radium should be used

in this case, except on the one large lesion I do not think it necessary on the others. The lesions are all superficial, and electrodesiccation would cause little scarring. I do not agree with the use of a small dose of radium. My usual dose of radium is a half strength plaque screened with a $\frac{1}{10}$ mm aluminum and applied without distance for six hours, and the resulting reaction heals in about six weeks. I have not had such good results with x-rays and recurrence is more frequent, possibly because I have less experience with this method.

A CASE FOR DIAGNOSIS (DERMATITIS EXFOLIATIVA?) Presented by DR CHARGIN

J F, aged 35, married, a clerk, had always been well except for seborrheic eczema of the scalp of two years' duration. The present illness began about three months previous to presentation when the patient noticed small, red patches over the face, spreading in the course of several days to the chest, neck, back, arms, hands, lower part of the abdomen and the thighs.

The eruption was erythematous, and consisted of large, discrete and confluent patches. There was considerable scaling. No infiltration was present. Subjectively, there was considerable itching. Results of the blood count and of chemical examination of the blood were negative. The urine was normal.

DISCUSSION

DR ABRAMOWITZ I am not convinced that an underlying seborrheic eczema is present. Seborrheic eczema is a definite clinical entity involving those areas of the body where sebaceous glands are present. This patient has almost a universal eruption with marked involvement of the hands and feet, an unusual place for seborrheic inflammatory lesions. One disease, mycosis fungoides, must still be considered, even though the biopsy does not show it.

DR BEST To consider mycosis fungoides or leukemia cutis of the aleukemic type is rather speculative. Clinically, there is a dermatitis exfoliativa, undoubtedly this condition is secondary. What instituted it? The only thing one has to base a diagnosis on is the history. The history shows a condition of the scalp and later a dermatitis extending downward from the scalp. From this I do not see how one can make any other diagnosis than a seborrheic dermatitis with a secondary dermatitis exfoliativa.

DR SKEER I thought it was a generalized seborrheic dermatitis, with secondary infection, beginning on the scalp and spreading over the shoulders and chest. However, one other disease must be ruled out. The fact that the patient is a metal worker and the possibility of his having a heavy metal dermatitis has to be considered. A blood and urine test for heavy metals should be made.

DR WALZER As a first diagnosis, I would suggest seborrheic dermatitis plus dermatitis exfoliativa.

Some of the lesions on the chest would suggest mycosis fungoides, but owing to the lack of infiltration, I would hesitate to call it so.

CHICAGO DERMATOLOGICAL SOCIETY

Regular Meeting, Dec 19, 1928

FRANCIS E. SENEAR, *President, Presiding*

A CASE FOR DIAGNOSIS Presented by DR BECKER

A woman, aged 22, three years before presentation, first noticed a lesion just below the left eyebrow. The lesion was about 0.5 cm in diameter, pinkish, scaly and nonpruritic. A year and a half later she noticed similar but much smaller

lesions on the eyelids, which were more inflamed and scaly at some times than at others. Local applications had been used, without benefit. When the patient was presented, there was a yellowish red-brown lesion, 0.5 cm in diameter just below the left eyebrow, and several lesions 1 mm in diameter on the left upper eyelid. They were slightly scaly and noninfiltrated. Glass pressure revealed questionable apple jelly nodules in only the smaller lesions on the eyelid.

Histologic examination revealed that the stratum corneum was thickened, especially about the follicular orifices. The stratum granulosum and germinativum were normal. The superficial dermis was slightly edematous, and contained a discontinuous massive round cell infiltrate.

DISCUSSION

DR WILE: The microscopic picture does not fit in with my idea of the clinical picture. I had the feeling that it was a small patch of milium tuberculosis, but was unable to satisfy myself that the microscopic picture bore out this diagnosis.

DR O'LEARY: I believe that the patient presents a superficial type of cutaneous tuberculosis, the lupus miliaris disseminatus faciei.

DR ORMSBY: I think it might be of interest to call the attention of the Society to a somewhat similar lesion, but one that has not been shown here. I tried to exhibit a patient with such a condition a few months ago. A group of such cases was described about one and one-half or two years ago by Brusgaard. They closely simulate extragenital chancre with its attendant regional adenopathy, but are tuberculous in character. In the patient seen here, a 12 year old girl, a crusted ulcer was present on the left brow extending toward the inner canthus of the eye. Coincidentally, there was marked adenopathy involving the submaxillary glands on the same side. A search of several days revealed no spirochetes, and repeated Wassermann tests remained negative. After six weeks the primary lesion healed, and then typical apple jelly brown nodules of the tuberculosis were revealed.

DR FINNERUD: There is a lesion on the lid which has a characteristic appearance, and I have no doubt that if it were removed the typical picture of tuberculosis would be seen under the microscope.

DR BECKER: I saw this patient first about a year ago, and the picture was the same then as now. The closest I could come to a diagnosis was that it was in the tuberculous group, possibly a sarcoid.

EPITHELIOMA (SUPERFICIAL, BASAL CELL) Presented by DR NOMLAND

A man, aged 60, had a pruritic lesion of six years' duration on the left side of his face, which began as a crusted spot and had slowly enlarged by peripheral extension. There were no lesions elsewhere on the body. When the patient was presented, there was a lesion 7.5 by 4 cm, which extended from just inside the hairline behind the left ear to the angle of the jaw. It was rather sharply demarcated, crusted, slightly scaling, and erythematous, resembling a chronic eczema. There was slight atrophic scarring in the glazed center of the lesion, and a barely perceptible induration in some portions. There was nothing resembling a pearly nodule, nor any suggestion of a threadlike progressing border. No enlarged glands could be palpated in the neck.

Section of a biopsy revealed the basal cell type of epithelioma. Islands of basal cell type nests could be seen to arise from the basal layer in many places. There was infiltration of the cutis with plasma cells and lymphocytes. The epidermis showed moderate parakeratosis.

DISCUSSION

DR HARRY R. FOERSTER: There was, I think, some question as to the clinical diagnosis. I did not consider epithelioma until I had looked at the microscopic section, which, of course, confirms that diagnosis.

PARAPSORIASIS Presented by DR STILLIANS

An American housewife, aged 23, had an eruption, which first appeared on the arms, later on the thighs and legs, of two and a half years' duration. On the flexor surface of the arms there was an eruption of scaly macules confluent in reticular arrangement, little deeper in color than the normal skin. The scales were adherent and pearly in appearance. The lines forming this reticulum were about 0.5 cm in width. On the trunk, but more thickly on the thighs and legs, were larger round macules covered with scales in some like the ones already described, and in others silvery and separating in sheets like the scales of psoriasis. These macules were also light pink and ranged in size up to 1.5 cm in diameter.

DISCUSSION

DR WILE I think that this was a well worth while case, and that the diagnosis lies between pityriasis lichenoides chronica, represented by Dr Foerster's case, and parapsoriasis en plaques. I think it was this kind of case that Dr Pollitzer had in mind when he described parakeratosis variegata. There are more than two types of parapsoriasis. There are many cases between the two main types, and I think that no one could say that this case was one of pityriasis lichenoides chronica, for it lacked several of the manifestations of that disease, notably the tendency of each papule to work up into a characteristic white scale. I think that the eruption in most of the cases of parapsoriasis of the guttate type is more inflammatory in appearance than it is in this one.

DR LIEBERTHAL I think we should wait a little while before making a definite diagnosis. It is an exceedingly interesting case.

DR FOERSTER I do not think Dr Wile meant to give us the impression that this case is a type of lichen variegatus, or parapsoriasis lichenoides of Brocq, but rather to indicate that there are connecting links between all of the type of parapsoriasis, one interlocking with the other. Lichen variegatus of Crocker, McLeod and Colcott Fox is a rare disease, and I believe there are not more than a dozen proved cases reported in the literature, and several of these might have a question mark placed after them. It is interesting and important to know that the condition in several cases which was thought by competent authorities to be parapsoriasis lichenoides or lichen variegatus later turned out to be mycosis fungoides. It is my belief that the disorder in Dr Stillians' patient falls midway between parapsoriasis en gouttes of Brocq (which is the same as pityriasis lichenoides chronica of Juliusberg) and the plaque type of parapsoriasis of Brocq, because the lesions are extremely superficial and consist chiefly of scaly macules arranged in large patches, and since there is a tendency to develop papular lesions. I think the absence of leukoderma is of importance in deciding against the acceptance of this case as of the Juliusberg type. Patients with pityriasis lichenoides chronica, in whom the disorder has existed as long as it has in this patient, could be expected to present a leukoderma as part of the symptomatology, since it is of such common occurrence in this variety of parapsoriasis.

DR ORMSBY In the first place, I agree with what has been said about this case. I have only seen one case in this country that I thought was a case of parakeratosis variegata, and that was shown recently by Dr Omens. I had an opportunity of studying the case recorded by Drs McLeod and Colcott Fox. There is a peculiar retiform arrangement of the lesions in those cases. I think this patient has parapsoriasis, and that it does not belong definitely to any of the three recognized types, though it resembles that of Juliusberg. This appears to demonstrate that there are transitional forms of this disease.

PITYRIASIS LICHENOIDES CHRONICA (JULIUSBERG) Presented by DR FOERSTER and DR WIEDER

C S, a white man, aged 37, first observed two inflammatory lesions over the anterior surface of the right hip approximately four weeks before presentation. About ten days later, a generalized eruption of scaly, inflammatory, and apparently

papular lesions of similar character appeared suddenly on the trunk and proximal portion of the extremities. The eruption did not involve the face, scalp, mucous membranes, hands, feet or lower part of the legs. There were no associated systemic symptoms, and the patient was otherwise apparently in good health. The previous history was negative.

On examination, December 10, the patient exhibited an inflammatory macular and papular, slightly scaly, eruption of the general distribution noted. The individual lesions varied in size from that of a pinhead to that of a small split-pea, and most of them showed fine adherent scales. In areas where scales had been scratched off by the patient because of slight pruritus, the surface was excoriated or smooth. There was a predilection of the eruption for flexural areas, and the lesions were in various phases of activity, some were inflammatory and showed soft infiltration and fine scaling, others were quiescent or had involuted, leaving lightly pigmented macules and in some instances slight depressions as though due to atrophy. Forcible removal of scales was followed by oozing of blood, but capillary hemorrhage was not observed.

Histologic examination of a papule showed dilation of the papillary and sub-papillary vessels with dense collarettes of perivascular infiltrate, chiefly round cells, and edema of the collagen, particularly in the papillary layer. There was moderate edema and cellular infiltration of the epidermis and parakeratosis. The adnexa were normal.

DISCUSSION

DR O'LEARY I had difficulty distinguishing between a parapsoriasis and the papular type of pityriasis rosea. The recent onset favors the latter diagnosis, although the distribution inclines me to the diagnosis of pityriasis lichenoides chronica. Further observation will no doubt readily permit of a definite decision.

DR FINNERUD I was reminded of the similar case that Dr. Oliver and I presented a year or two ago. That patient had an eruption of about a month's duration when first seen, and we thought it was the papular type of pityriasis rosea, but a month later it was definitely pityriasis lichenoides chronica.

DR WILE I think an unusual feature of this case is the sudden, acute onset and the presence of so many lesions. I have seen this occur in two cases, one immediately following a syphilid, and I learned when I reported that case that others had seen this, although there was no connection between the two diseases.

DR WIEDER The main feature in this case is the recent onset, and the man was shown for the purpose of provoking discussion. When we saw the patient all of us had the feeling that it might be a pityriasis rosea, but that most of its features were in favor of pityriasis lichenoides chronica.

DR FOERSTER An acute type of the disease has been shown to exist, and a number of cases have been reported, from Vienna particularly. In the earlier stages the eruption is vesicular and resembles varicella, in some others the resemblance to pityriasis rosea is pronounced.

The question has been raised, therefore, as to whether the name "pityriasis lichenoides chronica" should not be changed in the interest of accuracy by dropping the qualifying word "chronica." As yet the cases are too few to have the entire picture before us.

LEIOMYOMA Presented by DR. NOMLAND

A man, aged 37, had first noted small, pruritic, elevated lesions on his left shoulder blade about five years before presentation. He thought that they were insect bites, but the lesions had slowly enlarged and there was still slight itching. None of the tumors had disappeared. When the patient was presented, there were twelve to fifteen small, oval, rather superficial, hard, grouped tumors in the skin over the left scapular region. Each tumor was about 4 mm by 2 mm, and slightly tender to pressure. The skin over the lesions was of normal color. The long axis of the nodules followed the lines of cleavage of the skin. They became more prominent if they were rubbed.

Section of a biopsy stained with van Gieson showed the whorled, oval, yellow masses of smooth muscle in the upper and also in the deeper cutis. Several masses could be seen to arise from the erector pilorum muscles. Most of the masses were grouped about hair follicles.

DISCUSSION

DR FOERSTER Dr Ormsby is to be thanked for having shown us several instances of this rare condition as a result of which many of us have become trained to immediately recognize the salient features of the disorder. In this patient, even though only a small group of lesions is present, I think one finds all the characteristics of the disorder, even the oat grain-like shape or appearance was present in the single lesions on the shoulder dissociated from the grouped lesions.

DR ORMSBY It may be that the absence of pain is due to the fact that the lesions are not as hard as they usually become. In a resume I made of a number of cases I found that the pain not infrequently develops later, and that may be the history in this case. The apparent development of the tumor here from arrectores pilorum, as is shown in the histologic section, is also of interest.

DR NOWLAND The patient does not have pain, but has some itching in the lesions. When they are irritated they become more prominent. As stated in the history, the lesions follow the lines of cleavage of the skin.

DR OLIVER I think it is interesting to call attention to the fact that the two patients who were shown by Dr Ormsby two years ago were the first that were ever shown before this Society. This is the second case of leiomyoma to be shown this year.

FOLLICULITIS Presented by DR NOWLAND

A negress, aged 27, had a disorder of three or four years' duration. It consisted of repeated eruptions of lesions which resembled pimples, which were located chiefly on her extremities. The skin was never completely free of lesions, each one running its course in about three weeks, and always leaving a scar. The patient's general health was poor, and she gave a history of having a colostomy performed at the Cook County Hospital four years ago for a stricture of the rectum. This had recently given her trouble. Two recent Wassermann tests were negative. When presented, the patient's entire body was covered with pigmented, atrophic scars, most numerous on her legs. There were also many active lesions, consisting of infiltrated papules, and indolent, perifollicular pustules, each lesion being about 2 mm in diameter.

A well developed papulopustule was removed for study. The epidermis showed a crusted area, the size of the low power field of the microscope. There was also acanthosis in this region. The upper cutis was densely infiltrated with cells which were almost all lymphocytes. There was perivascular lymphocytic infiltration in the deeper cutis. A moderate sized vessel still lower down showed marked thickening of the wall, and some intimal proliferation, strongly suggesting the hematogenous origin of the lesions. Elsewhere the epidermis and dermis were normal. There was no suggestion of a tuberculous structure anywhere. Acid orcein stains showed that the elastic tissue was destroyed by the cell infiltrate.

DISCUSSION

DR STILLIANS I think this case is a characteristic tuberculid with a secondary infection on the legs.

DR OLIVER I think we see a great many of these cases. At the Cook County Hospital we see them constantly, but we are not always able to get a biopsy to substantiate the diagnosis.

DR NOWLAND The biopsy reveals the acute, nonspecific type of infiltration with crusting, and evidently some changes in the deeper vessels of the cutis, indicating the hematogenous origin of the condition.

TONGUE LESION FOR DIAGNOSIS Presented by DR ZEISLER

A woman, aged 69, seen for the first time on the day of presentation, said that for ten days she had had a lesion on her tongue, which had bled at times. Her blood pressure was 220 systolic. The lesion was soft, dark bluish-red, and was apparently a bleb filled with a blood clot.

DISCUSSION

DR FINNERUD I thought this was the site of a traumatized vein because it came on so acutely.

DR WILE I have seen lesions like this on the lip and think I can recall having seen them on the tongue, particularly in the presence of chronic nephritis. I do not know why they could not occur in hypertension as well. I believe that the lesion is a circumscribed hemorrhage, e. g., a hematoma.

DR STILLIANS Another possibility to be considered is that it is a cyst. I have seen mucous cysts of similar appearance.

DR ZEISLER My conception was the same as Dr Wile's. I look on the lesion as a traumatic hematoma, possibly associated with hypertension.

A CASE FOR DIAGNOSIS Presented by DR ZEISLER

A man, aged 30, was first seen ten days before presentation because of lesions on the backs of his hands. He was employed in a factory where he handled typewriter supplies, including carbon paper. When first seen he had some papules on his wrists, and later a few lesions developed on his face and neck. The lesions were flat, lichenoid papules, some having the color of lichen planus. The lesions on the face were not of the tint or usual angular appearance of lichen planus.

DISCUSSION

DR FOERSTER I first thought of the possibility of lichen planus, and then I was intrigued with the idea of a tuberculous process, particularly after looking at the lesion on the posterior surface of the helix of the ear. But finally I concluded that the lesions were probably verrucae plana.

DR LIEBERTHAL I believe that if a nodule or papule was excised, the diagnosis might be cleared up. It looks to me like lichen planus.

DR WILE I went through the same mental gymnastics that Dr Foerster did, but lean a little more toward the diagnosis of tuberculosis than toward the other two possibilities.

DR O'LEARY In addition to the diagnoses already offered I suggest the possibility of the papular type of lupus erythematosus, a form of lupus erythematosus which usually manifests itself as a mild disseminating type with predominant lesions on the hands during the early phases of the disease.

DR FINNERUD I thought it was the plane type of wart.

DR OLIVER About a year ago we had a similar case at the Children's Memorial Hospital in a child who had a group of verrucae planae juvenilis on the cheek. The lesions cleared up nicely under liquor calcis sulfurata (Vlemminckx' solution).

DR WILE Since we are so puzzled over this case, I would suggest that Dr Zeisler have sections made and studied, and report the observations to us later.

DR ZEISLER My first impression was that it was lichen planus because of the presence of flat-topped lesions on the hands and wrists. I administered mercury, which he did not stand very well. Since then the lesions have spread rapidly and involve areas seldom affected in lichen planus, so that my impression today is that he has verrucae planae juvenilis.

SUBSEQUENT NOTE The lesions disappeared after ten days' treatment with liquor calcis sulfurata.

**NEW YORK ACADEMY OF MEDICINE, SECTION
OF DERMATOLOGY AND SYPHILIS**

R H ROULISON, M D, *Secretary*

Regular Monthly Meeting, January, 1929

ISIDOR ROSEN, M D, *Chairman*

TUBERCULOSIS CUTIS VERRUCOSA Presented by DR FEIT

L N, a colored boy, aged 16, was admitted to the New York Skin and Cancer Hospital on May 23, 1928, with a granulomatous, fungating, slightly tender mass involving the lower lip and chin and extending for about 5 cm beneath the chin. There was considerable purulent exudate. The lesion had first appeared three years before admission to the hospital and had extended gradually up to the time of admission.

Two examinations of pus pockets for tinea and blastomycetes gave negative results. Cultures were likewise negative. The Wassermann test of the blood was negative. There was no gel formation after the addition of formaldehyde in the blood serum. Two biopsies taken showed a dense infiltration of islands of endothelioid cells associated with giant cells of the Langhans' type scattered throughout the corium and extending into the fatty tissue, areas of lymphocytes scattered throughout and hyperplastic blood vessels. Giant cells were negative for blastomycetes. The blood chemistry was normal. Other laboratory observations were irrelevant.

Treatment in the hospital consisted at first of wet applications of boric acid and daily exposure to the ultraviolet ray. Diet had been designed to provide as much nourishment as possible, and cod liver oil (1 dram [3.90 Gm] three times a day) was given. Roentgen treatment was begun on April 16. 10 one-fourth units of unfiltered roentgen radiation were given at weekly intervals, followed by 4 one-half units of unfiltered roentgen radiation at intervals of two weeks.

For the past three months the patient had received a weekly subcutaneous injection of old tuberculin prepared by Dr Barthel as follows: initial injection 0.1 cc of 0.000001 mg of tuberculin progressing by 0.1 cc each week. At the time of presentation the patient was receiving 0.2 cc of 0.00001 mg.

After the initiation of the tuberculin injections, improvement became marked, and at the time of presentation the patient showed only a scar with a narrow papular border surrounding. Photographs showed the lesion on admission to the hospital and at the time of presentation.

DISCUSSION

DR ABRAMOWITZ: There are probably different means of treating this particular type of lesion. The members will recall the case of a 12 year old girl with a severe type of lupus vulgaris of the face and scalp that I presented about two years ago as an entirely cured case after the use of gold therapy. She has remained well up to the present time.

THORIUM ULCERS Presented by DR FEIT

E H, a chemist, aged 30, a German from the New York Skin and Cancer Hospital, service of Dr Throne, had been in the United States thirteen years and had enjoyed good health all his life. In 1922, when the patient was working in a factory for military weapons he contracted burns from sulphuric and nitric acids which completely healed. Two years later an eczema-like eruption made its appearance. The dermatologist whom the patient consulted for the ailment applied doramad ointment to the affected areas and left it in the location of the burns for three days. In two weeks' time the eruption had completely healed. In 1926, the patient had a recurrence of his eczema, and doramad ointment was again applied.

once a week, during a period of two months, the ointment being left in place three days each week, a total application of twenty-four days. The eczema again disappeared.

The present eruption started on the hands and fingers as a little blister containing thin pus. These pustules coalesced and broke down leaving ulcers which were more or less deep and which healed slowly, in about six months. One of these ulcers necessitated the amputation of the right middle finger because of bone necrosis. There was great pain connected with these ulcers, so much so that the patient was forced to use morphine. There was no keratosis, telangiectases nor atrophy. The patient had used Lassars paste, wet dressings of boric acid, hydrogen peroxide and calamine and zinc lotion.

DISCUSSION

DR FEIT. About ten years ago we commenced using doramad ointment in Germany. It contains thorium emanation. It had to be ordered by express mail from the Auerlicht plant in Berlin to be used within a few days. It was used in all diseases of the skin in which the roentgen-rays or radium is used. I was told there exists a similar preparation in this country, called turbanite. This patient without any doubt had an overdose.

The patient's finger was removed two weeks ago by Dr Van Ess in Newark.

DR HIGHMAN. This story is reminiscent of the days when Pusey exposed thorium paste. It is possible that the man has sulphuric acid dermatitis.

DR OULMANN. Doramad is made from the ashes of the Welsbach mantle. It contains small amounts of thorium, and is rich in alpha rays. As the emanation has a short life, it could not be used for export. Jessner and others recommend it especially in cases of roentgen dermatitis, especially for the telangiectases and report good results. I know of its application for twenty-four hours without harm.

DR GOODMAN. It is difficult for me to believe that any radio-active ointment applied eight years ago could give rise to a condition as acute as this one. Nothing on the skin could lead one to the diagnosis of an acute radium or mesothorium dermatitis, and there are no features of late sequelae of such an application. The patient is still a chemist, and is probably exposed to the same or similar materials as caused the dermatitis years ago and for which the applications of doramad ointment were used.

DR BLOOM. I wish to remark that on the ring finger of one hand and the index finger of the other are numerous atrophic and telangiectatic spots.

DR FEIT. The burns from sulphuric acid which the patient had six years ago healed in a few weeks. It seemed to me improbable that such small amounts of thorium emanation should produce such a severe effect after so many years. I do not know how much emanation is contained in doramad.

May I recall to you the victims of the radium watch dial in Newark, who also used only emanation with the effect of severe bone necrosis, and the resulting occurrence of many deaths.

PERIFOLLICULITIS CAPITIS ABSCEDENS ET SUFFODIENS Presented by DR FEIT

T W, aged 23, born in the United States, said that the lesion had started on the left temple as a pustule, gradually involving the whole scalp. Tumors, varying in size from that of a dime to that of the fist, broke down and undermined the skin, leaving bald areas. Some of the nodules were entirely cut out, and disinfecting gauze was introduced which helped considerably but did not clear up the lesions entirely. Four months after the operation was performed new lesions developed in different parts of the head where no incision had been made. The patient received about thirty-six intradermal injections in the lesions of a vaccine consisting of *Staphylococcus Streptococcus* and coli bacilli (2 billion), each injection consisting of from 1 to 2 cc of vaccine.

DISCUSSION

DR LAPOWSKI To me the case is one of plain follicular infection, aggravated by the method of treatment. The large scars are due either to surgical intervention or to neglect. I see many such infections and they are cured with ointment and wet dressings without leaving such scars.

DR HIGHMAN I would be content to see a moratorium on cases of this sort. I think Dr Lapowski is right, it is an absurd designation and should not have weight among serious workers in dermatology. The man has deep abscesses of the scalp.

DR BECHET Have the lesions been freely incised and drained? That to my mind is the most important therapeutic measure in dealing with this condition.

DR FEIT Yes, the lesions have been freely incised without permanent result.

A CASE FOR DIAGNOSIS (PARAPSORIASIS?) Presented by DR ROSTENBERG

The patient L. R., aged 20, with a negative family history, claimed that his skin trouble had started at the age of 1 month. He had never been free from it since that time, although the rash had faded somewhat in the summer to reappear again in the winter. There had been no itching except after bathing.

On physical examination the patient was found to be fairly well developed and healthy. The eruption was fairly generalized, but most pronounced on the extremities, buttocks, neck, and also on the penis. The elementary lesion appeared to be a reddish macule about the size of a split pea, capped by a fine loosely adherent scale. These macules formed, by coalescence, reticulated and oval and round plaques of various sizes. The skin on some of these plaques, especially on the elbows, was more purplish, appearing thinner and showing cigaret-paper wrinkling, like that seen in cases of acrodermatitis chronica atrophicans.

The mucous membranes were not involved. The rash had been resistant to all treatment, including roentgen therapy.

DERMATITIS MEDICAMENTOSA (PHENOLTHALEIN?) Presented by DR ANDREWS

H. W., from the Vanderbilt Clinic, aged 28, a colored man, born in South Carolina, said he had had the eruption since the spring of 1928. The patient had been taking numerous patent medicines which had not been identified up to the time of presentation. In May he had received four intravenous injections because of a positive Wassermann reaction. The patient had had a gonorrheal infection since May.

On examination the patient presented rather uniform lesions of about the size of a quarter consisting mainly of a brownish-black pigmentation. Surrounding the pigmentation was a narrow zone of erythema. There were also smaller and larger lesions of the same character which had a tendency to become confluent.

DISCUSSION

DR ABRAMOWITZ It is true that there are several kinds of drugs which may cause this peculiar pigmentation, but, owing to the fact that the patient has not received any injections of neoarsphenamine since last May (about six months) it is fair to assume that this pigmentation is not due to arsphenamine. If a patient is given a dose of phenolphthalein and a flare-up does not occur around the pigmented lesion, a phenolphthalein eruption cannot be ruled out. That is because the idiosyncrasy to this drug varies. Sometimes the patient may or may not respond. This man has been taking cathartics of two kinds, one a pink pill, the other a patent remedy, a laxative. He has been taking one of these for a year, the other for a longer time.

Another point is the increase in the number of this type of drug eruptions in colored people. It used to be rare to see such lesions in colored people, but it seems that phenolphthalein has become popular among them now. The point has been raised several times whether it is the yellow or the white type of phenolphthalein that produces this lesion. Patients with the type of eruption

produced by the white phenolphthalein have been given the yellow kind, and there has been no difference in response to the test. That point, however, is not settled. A little alkaline solution added to any product that contains phenolphthalein brings out a purple red coloration. Cascara although related to phenolphthalein does not give the test. The coating of a pill, or chewing gum laxative may contain phenolphthalein, and then will give a positive test.

DR OCHS. As regards the phenolphthalein eruption in colored people, it is first more bluish in tint than that which occurs in white people, when the rash appears in white people, it is not bluish but reddish brown and later becomes bluish and then dark brown or even black.

I agree with Dr Abramowitz that idiosyncrasy to this drug varies. A patient may react positively at one time and negatively at another time. I have encountered such cases. I recall a patient who had white areas within the typical lesions of phenolphthalein.

DR BECHET. As far as any relative frequency of rashes from the use of the yellow or white phenolphthalein is concerned, I do not think that holds true. I believe that they are both equally at fault. I think that the greater preponderance of eruptions produced from phenolphthalein in this country is due to the enormous consumption of the drug in candy form. One of our flourishing real estate concerns, dealing in millions of dollars worth of property, was founded on sales of this drug in enormous quantities. The corner drug stores carry placards which announce that life is not worth living without it. Even the millionaire chewing gum manufacturers are taking it up. The surprising fact, therefore, in view of this enormous consumption, is that the rash is not more frequent.

URETHRAL CHANCRE Presented by DR FEIT

N X, a man, aged 44, born in Greece, was seen at the Vanderbilt Clinic on Dec 18, 1928, at which time he said that he had had a pain at the orifice of the urethra for the past two weeks. On examination there was a reddening of the tip of the glans penis. The urethral orifice was glued together by a serum-like exudate. A painless nodule could be felt within the urethra. The dark-field examination for spirochetes was positive. The Wassermann reaction was four plus.

DISCUSSION

DR THORNLEY. I think that this is an exceedingly instructive case. I am of the opinion that a large proportion of urethral chancres escape observation. I know of many patients with positive Wassermann reactions and clinical signs of syphilis, who positively deny a history of chancre, however, they freely admit a so-called gonorrhea that developed about two or three weeks after the last intercourse. I think the question of urethral chancre should always be considered in any cases of urethral discharge, even when the gonococcus can be demonstrated.

ACRODERMATITIS CONTINUÉ (HALLOPEAU) Presented by DR FEIT

S N, a man, aged 18, born in the United States, of Hungarian extraction, presented himself at the New York Skin and Cancer Hospital. He said that he had never been sick before, and that no one in his family (which consisted of twelve members) had ever had a similar disease. The eruption had started when the patient was 1 year of age, on both hands, volar and dorsal surfaces, starting around the nail bed of the left middle fingers (according to the statement of his parents). The primary lesion was always a pustule. These pustules opened to form a crust. Any place that he might bruise the nails would fall off (so he was told), and he never saw a regular nail himself in the affected areas. Always new pustules formed involving one finger after the other, forming patches of different sizes and shapes. Besides a slight burning sensation after dipping the hands in warm water, the affected parts were not sensitive. The eruption would appear and disappear every few days leaving a raw red skin. The nail bed was covered with a fine pellicle, the red areas were slightly atrophic.

The patient was treated with monthly roentgen treatments over a period of seven months, which helped a little, but the eruption recurred after two or three days. The patient was advised to be treated with an autogenous vaccine in the lesions.

DISCUSSION

DR LAPOWSKI I would classify the present case as plain parasitic dermatitis which one sees in the clinic in great numbers and which will disappear under careful observation and treatment without leaving any marks. The involvement of the nail is due to trauma. This case does not belong to that form which Hallopeau described under the name of *acrodermatitis continua*.

DR FEIT I saw a case of this kind in Berlin, in the service of Dr. Arndt, and also in the Museum of the St. Louis Hospital in Paris. Darier in his new book spent a whole page describing this disease. This disease is a distinct entity, it started when the patient was 1 year old, and has continued since that time. It clears up spontaneously every few weeks to recur, starting always with pustules and leaving atrophy of the skin and nails. The two cases I saw before were similar to this case. The opinion of the French school is that it may be a localized Dühring's disease. One would first think of ringworm in this case, especially as fungus diseases are so common, but the history and repeated examinations exclude this possibility.

DR CHARGIN I accept the diagnosis as presented and believe it to be a typical case of the disease as described by Hallopeau. The primary lesion is a pustule arising at the tips of the fingers isolated or in groups. New lesions are added, and the nails become affected and are lost. Eventually there is atrophy with redness of the area affected.

This patient may have a dermatophytosis on the toes, but that does not alter the diagnosis of the condition on the fingers.

A CASE FOR DIAGNOSIS (ARSENICAL ERUPTION?) Presented by DR CANNON

L. M., a colored woman, aged 33, born in Cuba, was seen at the Vanderbilt Clinic on December 26. The eruption had come on about three weeks previous to presentation and had been spreading since then. The clinical records showed that the patient had been previously seen on May 10, 1928, with a generalized follicular eruption and slight edema of the ankles which had followed injections of mercury. Previous to that the patient had been in the City Hospital for three months with a generalized exfoliating dermatitis which had followed two injections of arsphenamine. The patient said that she had not had any antisypilitic treatment since May, 1928. She complained of feeling ill since the onset of the last attack.

Examination revealed a most extensive eruption surrounding the trunk from the breast down to the inguinal region. There were numerous circumscribed patches with a scaly and crusted center and minute vesicles and pustules at the periphery. Small discrete vesicles and pustules were also scattered over the upper trunk and in the cubital regions.

DISCUSSION

DR TULIPAN I think that it is pityriasis rosea, with a superimposed dermatitis venenata. This eruption is limited to the trunk, extending to the elbows with just a few lesions on the forearm, while those on the legs do not extend beyond the knees. Certain lesions are typical, elliptical, with slight pigmentation in the center, and a definite border. I think the vesiculation is due to some irritating topical application.

DR ABRAVOWITZ I do not think this eruption is as simple a disease as pityriasis rosea. I think the eruption is rather serious. The onset followed treatment with arsphenamine which may have been the inciting cause in this particular case, but I do not believe that the present eruption has anything to do with arsenic. It seems to me that we are seeing more patients of this type than we formerly did, in which the onset begins with a nondescript papular dermatitis that may resemble scabies, and for which some strong ointment has usually been prescribed, causing a

severe dermatitis. The eruption spreads in spite of all measures and in some instances ends fatally. I had such a patient recently. I think this type of eruption should be investigated carefully, as it represents a high degree of irritability of the skin which, in turn, causes a severe systemic disturbance.

DR LEVIN. I do not agree with the diagnosis of pityriasis rosea. The patient presented a generalized eruption, made of vesicles, papules and eczematoid areas. The lesions were discrete and grouped, and showed a tendency to patch formation. Pruritus was intense. The picture suggested that of dermatitis herpetiformis. However, I believe that the condition is that of dermatitis medicamentosa. This type of eruption has been frequently observed in patients who have had injections of arsphenamine or other forms of arsenic, and who develop eczema subsequently, on receiving injections of arsenic or bismuth. It may also occur with injections of mercury in those patients whose skin is sensitized. I have two patients under treatment at the present time who present similar phenomena.

DR CANNON. The clinical course of the patient has been most interesting to us. I first saw the woman one year ago at the City Hospital. She had been in the hospital two months then, with a history of a slight eruption over the chest and face for which she had received two injections of arsphenamine. The eruption became much worse after the two treatments and gradually spread all over the body and extremities as an itching, weeping and crusting condition of the skin. During her eight months' stay in the hospital, the skin became almost entirely normal on numerous occasions, and just as we were about to discharge her she would have an acute attack, with redness and swelling and vesiculation usually on the upper part of the trunk, neck and face. As the dermatitis became older and the process extended, it assumed a different character in that it became diffuse with surrounding erythema multiforme-like lesions. Examinations of the blood, urine and the tissue showed only a slight increase of arsenic. The treatment consisted for the most part of injections of sodium thiosulphate, forced fluids, soothing baths, ointments and lotions. The Wassermann reaction was always negative. The patient was finally discharged from the hospital apparently cured, but since that time she has had several similar attacks and was sent to the Vanderbilt Clinic two weeks before the present illness because of the persistence of the eruption. We have been inclined to think that it was allergic dermatitis and have begun to investigate the condition with this in view. We have also again taken tests of the blood, urine and skin for arsenic determination.

The eruption at the time of the last presentation was of the same type that she had had at intervals during the course of the disease.

ROSACEA AND KERATITIS. Presented by DR SPIEGEL.

A W., aged 43, a widow, born in Ireland, a resident of the United States for twenty years, reported to the Lenox Hill Hospital complaining of three or four previous attacks of eye trouble and an eruption on the face occurring at the same time. She had sought relief at the Lenox Hill Hospital Dispensary on three different occasions, and each successive attack was more severe than the preceding one. The first attack had occurred during 1924, and she made but a few visits to the dispensary.

During April, 1926, the patient suffered a rather severe attack and was in the hospital for thirteen days. The diagnosis as entered on the history was acne rosacea, acute conjunctivitis and sclerotic folliculitis.

The last attack dated back for about four or five months, and she again went to the Eye Clinic at the Dispensary on Nov. 17, 1928, for the painful eye symptoms. Examination at that time showed the typical picture of rosacea with numerous acne papules and pustules on the cheeks and forehead with telangiectasia most evident on the skin and nose. The eye condition was diagnosed as rosacea of the cornea and keratitis. She was operated on Dec. 17, 1928, and a transplant was performed on each eye. At the time of presentation her condition had improved to such an extent that the photophobia had practically disappeared and the skin lesions had cleared up, so that only the vascular dilatations were visible.

DISCUSSION

DR FEIT What connection exists between the skin and the eye lesion? Is it the same process? I have twice seen keratitis develop in patients with rosacea and thought it was accidental, until I read Eastwood's paper in which he mentions a certain percentage of such occurrences

DR HIGHMAN How commonly is this ocular disturbance found without rosacea? It is important to settle this point in order to establish a possible relationship between the two, or the question of coincidence

If Dr Reid's last interpretation makes the eye condition consonant with rosacea, the term acne should be abandoned. The acne is only incidental. Under conditions governing rosacea, suppuration easily takes place in the follicles. The disease, whatever the underlying cause, is basically a disturbance of the capillaries of the face with lack of resiliency in the vessel walls but is not due to elastic tissue degeneration in the vessels, only diminished elasticity. In early cases it is not irremediable. If this can occur in the skin, a corresponding process may take place in the cornea. If that is true, the two conditions might be allied. I am inclined to think Dr Reid's interpretation is sound.

DR CANNON I think we all see associated with severe rosacea, a congestion of the conjunctiva and a pustular folliculitis of the eyelids. I have never seen a keratitis associated with acne rosacea. I think the case is interesting.

DR GOODMAN I am free to confess that I have never seen this condition before. I should like to know how frequently they appear in the eye clinic, if the condition of the cornea can be diagnosed independently of the skin and what the outcome usually is.

' SARCOID (DARIER-ROUSSEY) Presented by DR TULIPAN

A C, aged 45, colored, married, first noticed a mass on the nose and two similar lesions on the arm and forearm, which were painless. She had received some intravenous injections at the Vanderbilt Clinic. Nine months prior to presentation she was first seen at the New York University Clinic, at which time she presented two dime-sized lesions around the elbow one above and one below, these lesions were violaceous, infiltrated, attached to the skin and movable over the deeper parts. The lesion on the nose was slightly flatter and showed telangiectasia.

Biopsy Report—The epidermis showed no noteworthy changes, but from the lower two fifths of the corium down was an infiltration which in places seemed to fuse, but could nevertheless be analyzed into its component small foci. The large vessels even away from the infiltration were markedly thickened, while within the inflammation they were slightly thickened. The areas in which the infiltration lay were slightly edematous. A typical focus was almost a solid mass of lymphocytes and an occasional giant cell. The vessels lying between the infiltration and the epidermis were all markedly dilated. A good many foci surrounded coil glands. On account of the number of epithelioid cells, and in spite of the vascular changes together with almost typical tubercles containing giant cells in the hypoderm, the slide could be regarded as a sarcoid of the Darier-Roussey type.

DISCUSSION

DR HIGHMAN I studied a specimen of one of the lesions microscopically. The essential difference between the Boeck and Darier-Roussey type is merely a matter of volume, so that the differentiation becomes a pedantic refinement. The section was typically of tuberculous construction, and it was more on the histologic than on the purely clinical data that Dr Tulipan decided it was of the Darier-Roussey type. It is tuberculosis of the skin. As Boeck himself said in a posthumous article, sarcoid is tuberculosis. There is as much sense in differentiating between sarcoid of Boeck and Darier, as there would be in differentiating between lupus vulgaris of one subvariety and another.

DR LEVIN I believe the case to be that of sarcoid, but of the Boeck type, because of its superficial character.

PHILADELPHIA DERMATOLOGICAL SOCIETY

CARROLL S WRIGHT, M D, *Secretary**Regular Meeting, Jan 4, 1929*S S GREENBAUM, M D, *Presiding*

MONGOLIAN BLUE SPOTS Presented by DR GILMAN for DR STOKES

Two colored children, aged 5 and 8 years respectively, were born with linear, bluish discolorations over the lower part of the back. The mother has one older child who is not affected. The older of the two children is losing the pigmentation, it being decidedly fainter than in the younger. There is no history of this occurrence in the family. There was a white grandfather on both the mother's and the father's side. The original complaint of the younger child was eczema due directly to cow's milk. These patients are presented for the pigmentary abnormality because of its typical location, the race of the children and the congenital occurrence.

A CASE FOR DIAGNOSIS Presented by DR CROSS for DR SCHAMBERG

M K, a white man, married, aged 45, entered the clinic two weeks before the present examination and presented many groups of pinpoint to pinhead sized, reddish elevations, one patch of which showed a brownish pigmentation in the center. These areas were present chiefly on the inner aspect of both legs, and a few patches were also noted on the anterior surface of the right thigh. These hemorrhagic areas did not disappear on pressure. The patient did not present any symptoms. The condition had been present for three months. The patient said that during the past several weeks these areas have been gradually growing lighter.

Laboratory Observations—The urine was normal. The first blood count, taken on December 3, showed red cells, 5,510,000, leukocytes, 7,500, hemoglobin, 108 per cent, small lymphocytes, 39 and polymorphonuclears, 56 per cent. Two weeks later another blood count was made which showed red cells, 5,260,000, leukocytes, 6,800, hemoglobin, 102 per cent, lymphocytes, 52 per cent, polymorphonuclears, 40 per cent.

Chemical examination of the blood on December 20 showed cholesterol 168, sugar 96, uric acid 23 and urea nitrogen 15. Results of the physical examination were negative except for diseased tonsils. The blood pressure was normal.

DISCUSSION

DR STROHM I think this case presents a good many earmarks of a purpura. I did not hear anything in the history of any pains in the joints, I heard something about diseased tonsils. I feel from similar cases I have seen that this eruption must be purpuric in type, although I will grant that it is of rather long standing. It is not old enough for any definite pigmentation.

DR CORSON Some places seemed to me to be suggestive of early Schamberg's disease.

DR BROWN The thought occurred to me that it might be an eruption of the phenolphthalein type, which has been produced by drugs.

DR STOKES I have been interested in this condition for a long time, but I have not been able to tie anybody down to a definite description of it. Perhaps Dr Schamberg will elucidate the difference between Schamberg's disease and this condition. I had this condition called to my attention by the fact that the government official in whom I first saw it was shortly after imprisoned for pro-German activities, so it may be an evidence of bad blood. He was subsequently seen by another dermatologist, who did not commit himself to a diagnosis. I have seen cases of purpura annularis telangiectodes of Majocchi diagnosed on pictures resembling this to some extent. Personally, in my experience, pictures like this have usually occurred on the legs of older persons who show a pre-

mature tendency to atrophic changes in the skin, and who frequently have varicose veins. The distribution in this case, however, is not particularly suggestive of anything with a vascular stasis background. Undoubtedly, the individual lesions do look purpuric with miliary hemorrhages, or traumatic to some extent in origin. I really cannot say what I think it is, and I have never heard anybody else express with any clearness what this might be. Perhaps Dr. Schamberg, who has given so much attention to kindred conditions, will be able to explain it.

DR. SCHAMBERG. Dr. Stokes has pertinently referred to the condition as one which does not permit any dogmatism in diagnosis, and has suggested the condition which I really think it is. I regard it as a form, not the most characteristic, however, of Majocchi's disease. Unfortunately, the area which was the most characteristic has been disfigured by the biopsy, which has led to a considerable involution of lesions there. In the biopsy area there was a palm-sized area of central pigmentation surrounded with these thrombosed, hemorrhagic puncta, which gave it an annular appearance. Moreover, two weeks ago there was a crescentic patch on the thigh just above the knee. Now the lesions themselves consist of reddish elevations, the size of a small pinhead, the color not being made to disappear on diascopic pressure. This shows definitely that it is more than an overfilled state of the blood vessels. These points probably represent thrombosed capillary loops. On the posterior aspect of the calf there is a distinct pigmentation, and there is some pigmentation in other areas. Now a certain group of dermatologists in Germany regard the progressive pigmentary dermatosis as simply a form of Majocchi's disease, but I should never regard this case as the progressive pigmentary dermatosis, because there is a reversal of symptoms here as compared with those found in that condition. In the pigmentary dermatosis the dominant picture is that of pigmentation, and the small cayenne pepper-like puncta, as I first described them, have to be looked for and viewed in a good light. In the case before us the reddish elevations and puncta are the things which stand out, and the pigmentation here is purely secondary and a rather subordinate characteristic, whereas it is the dominant characteristic in progressive pigmentary dermatosis. I am early awaiting the results of the microscopic examination in this case to see whether we do not find a capillary endarteritis, which is one of the most characteristic features of Majocchi's disease. The course which this is running lends color to that diagnosis. It is not an ordinary purpura because it has lasted three months now, and Majocchi's disease is often a matter of a few months to a year. Progressive pigmentary dermatosis usually lasts a number of years.

One of the dermatologists of Berlin told me that he had found a pleocytosis in progressive pigmentary dermatosis. I told him we had not made counts of the red cells, but that we had found a hypercholesteremia in five or six cases. In virtually all that I have seen, a pathologic amount of cholesterol has been found in the blood, and these tests have been made by an expert chemist. I know of certain hospital tests made in these cases in which the cholesterol test was inaccurate. It remains to be seen whether an increased blood cholesterol is constantly present in progressive pigmentary dermatosis. The thought has run through my mind that the Berlin dermatologist was confounding progressive pigmentary dermatosis with Majocchi's disease and that he had found a pleocytosis, which possibly may occur in Majocchi's disease. The Berlin school regards the two conditions as one and the same disease, an opinion which is not shared by most of the German dermatologists. The patient shown this evening has had on several occasions a normal blood cholesterol, but with 102 and 108 per cent hemoglobin on two examinations, and 5,500,000 red blood cells. The case is one of great interest not only from an academic point of view but from a nosologic standpoint, and particularly in the relation of the pathologic processes to the possible clinical ones.

We have recently sent sections from a progressive pigmentary dermatosis to Dr. Wiedman. He made a most elaborate study of the sections, and we will have an opportunity later to hear the observations. The angioma of Hutchinson, of course, is not to be considered here. This is not, however, what many of the

American dermatologists regard as merely a hemostatic dermatitis due to varicose veins in the legs. That was thought to be the possible cause of the condition originally described as progressive pigmentary dermatosis, until it was found that the eruption also appeared on the arms and back, and in subjects who had no visibly enlarged veins. This man has lesions extending up to the trochanter. As Dr Stokes has clearly observed, there is no evidence of associated varicosity.

DR SCHILDKRAUT I might mention a case of progressive pigmentary dermatosis, showing a high cholesterol content of the blood, which I showed here a few years ago.

LICHEN PLANUS ATROPHICUS Presented by DR GREENBAUM

A man, about 40 years of age, presented an atrophic white patch of five years' duration. It was irregular in shape and seemed to be composed of papules. He said that there was a certain amount of pruritus that varied in severity from time to time.

DISCUSSION

DR KLAUDER I cannot be certain that this is lichen planus atrophicus. I think there is a possibility of morphea.

DR STOKES I am inclined rather to agree with Dr Greenbaum as to the diagnosis here, although I must say frankly that I have seen these solitary patches occur between the shoulder blades and high up on the neck, the condition in one case, which I particularly recall, remained as an isolated lesion on the back before the first lesion of lichen planus appeared on the forearms, so that this may compel us some day to alter the diagnosis. I would be more inclined to consider it lichen sclerosus et atrophicus of Hallopeau. I am absolutely positive that it is not nevus anemicus, in which I have been interested for a long time following the observations of Vorner and F. G. Harris. In nevus anemicus no visible changes occur in the skin other than the pallor. Here there is a distinctive cross-hatching of the skin and really a division of the lesions into groups, as Dr Greenbaum said, with atrophic remains of what may have been papular lesions. At the present time, I see no evidence that the condition is morphea. Of course, it may be the remains of a morphea, and white spot disease is something which I revise my conceptions of every time I read the journals.

DR SCHAMBERG Some years ago I described a case of lichen sclerosus et atrophicus occurring on the palmar surfaces of the wrists, and the lesions in this case are in conformity with the case described. They even have a suggestion of a central follicular keratotic plug. The suggestion of a possible morphea is not out of the question because in this case one sees what is rather unusual in lichen sclerosus atrophicus, a broad band of deep reddish aureola apparently due to a fine enlargement of the capillaries of the skin, but the process in the skin is not deep enough, in my opinion, to constitute a morphea. The process is superficial and shows a white glossy surface, so I believe the original diagnosis is correct.

AUTOINOCULATION OF CHANCROIDS Presented by DR GREENBAUM

These three patients present conditions on the arms which were induced from material that come from the genital chancroids. They were produced partly for diagnostic purposes and for certain scientific studies. These cases demonstrate the appearance of the autoinoculation chancre. One of these shows a lesion was forty-eight hours in developing—just a mere crust is all we saw when the patient presented himself today, but beneath that crust was a definite ulcer. The other two are a little older—one is of the dwarf type and one of the giant type of chancre. These particular cases have been done largely for diagnostic reasons, but it has given us an excellent opportunity to study the effects of various compounds on the chancroids. I feel that it is extremely important to destroy the lesion as soon as it is diagnosed as positive, which should be possible within forty-eight hours. I should like particular suggestions as to methods of treatment for these patients.

DISCUSSION

DR STOKES Have you isolated the Ducrey organism?

DR GREENBAUM This particular type of ulcer appears on the genitalia, and only this one type will produce a positive "take" in forty-eight hours when inoculated on the arm. We are making cultural studies in the various cases, and I will not say definitely that the streptobacillus of Ducrey has been isolated.

DR WRIGHT Is it easy to isolate the Ducrey bacillus?

DR STOKES I never make the attempt. When one calls a lesion a chancroid, one is using a loose term, chancroid exists, but many lesions are called chancroids that really are not.

DR BROWN A number of different type organisms are usually found in these lesions. I was wondering whether it would be possible to make a culture in the patient's blood to see which ones would grow. I should think that in determining the pathogenicity the organism that does the damage would grow in the blood of the affected patient.

MELANOTIC SARCOMA Presented by DR KLAUDER

A machinist, aged 42, had a lesion on his back about the size of a half dollar. He told me it was black, about $\frac{1}{8}$ inch (15.8 mm) elevated and pruritic. He went to a surgeon, who made a wide excision and removed the growth. Within two weeks after the growth was removed, a number of new lesions developed at the site, and at the time of presentation a decided scar was shown, with probably twenty or thirty black keratotic elevations, rather flat and pigmented, surrounding and present in this scar.

It would appear at first glance that the malignant condition occurred after the operation, but I do not believe this is the case. In some other cases which I am studying, at first glance it appeared that subsequent to some operative procedure they became malignant, but on close questioning I found there was evidence of a previous malignant condition, such as bleeding easily when traumatized previous to operation, that is one of the first signs of a malignant condition, and occurred with the growth removed in this case. It also formed a crust. The important point about these cases is the failure of physicians to make a routine histologic study and then to follow it up with the appropriate roentgen treatment. The only thing to be done is to use filtered x-rays with high voltage.

DR STRAUSS I rather agree that in a number of these cases the condition is malignant before operative procedure. I think we saw a case recently in rather a young subject in whom there was marked metastasis without any operative intervention. The only other two cases I remember seeing — both fatal — followed operative procedures, but this last case supports what Dr Klauder suggested, namely that they might be malignant before surgical intervention.

DR SCHAMBERG I recall the case of a man from out of town who had a faintly elevated, brown pigmentary patch on the toe on which he also had a vesicular eczema. He was given mild roentgen treatment for the eczema, and some four or five years later I heard that he had developed a melanotic sarcoma with enlargement of the glands of the groin and the growths farther up. In his case this pigmentation looked to be of a benign character, and it has impressed me with the fact that when there is pigmentation in an area subjected to irritation, it is advisable to take radical surgical measures, this man's whole toe probably should have been removed. The present case is an extremely curious one. I am not sure that the lesions there represent metastasis, they rather give the impression of having developed spontaneously owing to the inherent disposition of the skin adjacent to the operated area. They are extremely superficial. They are keratotic, pigmented, but of little depth, and it is impossible for any one to say that if he had not been operated on he might not have developed these lesions. The condition is potentially malignant, whether or not the lesions show histologic changes that are malignant. My opinion would be that it would be advisable

to destroy these by electrodesiccation followed by roentgen therapy. He has some few lesions scattered a distance from the other area, some of which are extremely superficial, my opinion is that they are new lesions which would have developed independent of the original surgical procedure.

DR STOKES. I think Dr Klauder is right that this is probably a malignant process. At the same time, in the gloom that surrounds such a prognosis, I would like to shed a gleam of light. I do not know how many of you have watched the recurrence of a benign pigmentary nevus if not thoroughly removed. There are some things about this which suggest this possibility, the things that Dr Schamberg called attention to—extremely superficial, linear, striate, almost scratch-like recurrences along the margin of the scar. The occurrence of lesions at some little distance, of course, gives one a shock, one thinks this must be a malignant process, and yet it is surprising how often these lesions were present before the large lesion was removed. Unless one has a photographic record one cannot be sure that some of those were not present before the operation, so that I would not make too categorical a statement about the immediate or near fatal ending.

There is another thing that is worth pointing out about some of these malignant melanomas, they are apt to have a low rather than a high grade of malignancy. At the Mayo Clinic my attention was called to a case of metastatic benign carcinoma of eighteen years' duration, in which the patient was still in fairly good health. One ought not to give this man up without putting up a good fight for him. I would suggest extensive coagulation, and I would suggest that before more x-rays are used in therapy, we see whether there are any metastases in the chest. If we burn up the skin of his back with x-rays before examining the chest, we may never be able to satisfy ourselves on this point.

DR KLAUDER. I have been interested in the question of what type of nevi should be removed. Clinically, the amount of pigmentation has been stressed, also the fact that the more likely it is to be irritated, the greater the hazard. If the lesion is not so dark and not likely to be irritated, the less is the hazard. That apparently is not true pathologically, as far as I am able to visualize the studies of others, especially Dawson. He stresses the presence of the nevus cell, whether pigmented or not. He does not stress the amount of pigment, but the presence of the nevus cell. Dawson reports instances in which metastasis of malignant melanoma is developed from an insignificant lesion with reference to the amount of pigmentation. If that is the case, then all nevus cell tumors should be removed from the standpoint of malignant melanoma, whether they are pigmented or not, and whether irritated or not. If it arises spontaneously, then it seems to me that those tumors which arise spontaneously cannot be excluded, and the effective measure is to remove all of them.

MYCOSIS FUNGOIDES IN THE TUMOR STAGE Presented by DR BROWN

A woman in the early 40's had had a pruritic skin disease for eighteen years. At the present time she had a generalized eczematoid condition of the entire body, and on her face and scalp there were a number of nodular lesions, infiltrated and elevated. She also has a diffuse erythema of her face. I think this is a case of mycosis fungoides in the tumor stage.

DISCUSSION

DR CORSON. I agree with the diagnosis.

DR SCHAMBERG. I agree with the diagnosis made by the presenter. It is a case of advanced mycosis fungoides in the tumor stage. I should like to inquire how much roentgen treatment the patient has had and whether the patient has had any intravenous injections of neoarsphenamine.

DR BROWN. I do not know just how much roentgen treatment she has had, but I understand that she was in New York several months a few years ago and

that she has been in Europe. She states that she has had roentgen treatment and some intravenous treatment.

DR SCHAMBERG. We have recently had a case of mycosis fungoides in which thus far admirable results have been achieved by the x-rays and intravenous injections of neoarsphenamine. The woman has shown astonishing improvement, of course, she may suffer a relapse at any time.

ST LOUIS DERMATOLOGICAL SOCIETY

NORMAN TOBIAS, M D, *Secretary*

R H DAVIS, M D, *President*

Regular Meeting, Jan 9, 1929

XERODERMA PIGMENTOSUM Presented by DR KRING

A white boy, aged 5, was the only one in the family with any history of xeroderma pigmentosum. He had two half brothers who were well, as were also the parents. The patient was first seen by me on November 12, with a history of the lesions coming out first on the face at the age of 6 months and then gradually spreading down over the neck, chest and arms. There were also lesions on the scalp at that time. He had been seen by various physicians and had received various treatments without any improvement.

Examination revealed that he was fairly well nourished, and about the general size of a child of his age. His mental condition seemed normal. The lesions were brownish, some black, and of various sizes and configurations, they extended down the chest, back, both arms and hands, but no telangiectasis could be made out. The skin of the ears, nose and mouth and around the eyes was parchment-like and contracted. The eyes were red, the lids were contracted and the patient suffered from a considerable degree of photophobia. The skin over the back was dry and itchy, so that the patient craved for some one to scratch it.

I saw him only once before, hence, my report is short. As this disease is congenital and probably caused by an abnormal sensitivity of the skin to wind and sunlight, full consideration should suggest the proper mode of treatment.

GEOGRAPHIC TONGUE Presented by DR CONRAD

A man, aged 43, a mechanic, when presented before this society two years ago, showed several lesions along the left border of the tongue, varying in size from that of a match head at the tip to that of a dime. After two years, he showed the same lesions scattered over both borders and at the tip of the tongue. The lesions on the left side were irregular in outline, with whitish gray edges, and slightly raised above the surrounding tissue. They varied in size and there seemed to be some destruction of the central areas. The lesions on the right border did not show the destruction that those on the left did. The Wassermann reaction had been negative for the past eight years, although he had had a positive Wassermann reaction ten years previously for which he had been treated.

MULTIPLE BENIGN TUMOR-LIKE GROWTHS Presented by DR TOBIAS

A white woman, aged 26, married, presented a condition which began at the age of 13 when reddish lesions, about the size of a dime, appeared on the right forearm. In the course of a month or two, these lesions appeared on other parts of the body, especially on the extremities and back, gradually disappearing and leaving scars. On examination, the patient presented a more or less generalized eruption consisting of round and oval scars, some depressed and others level with the skin, with many others, especially on the arms and forearms, showing

a distinct bulging This was especially marked when the patient was in an upright position The bulging lesions, which were newer than the depressed ones, could be pressed back into the skin with the finger, not unlike a hernial sac The skin over many of the lesions was covered with a fine network of dilated capillaries New lesions had appeared in the past six months on the anterior surfaces of the legs There were no subjective symptoms On the left arm, there was a large tattooed design There was a slight exophthalmos, and the general make-up of the patient suggested mild hyperthyroidism

DISCUSSION

DR KRING I think the condition is von Recklinghausen's disease

DR GRINDON It is much like von Recklinghausen's disease but differs in certain particulars

DR TOBIAS I have studied this case carefully for two weeks It is typical of Schweninger and Buzzi's multiple tumor-like new-growths of the skin It is really a macular atrophy with degeneration of the elastic tissues which causes the skin to bulge out This bulging is due to the loss of elastic tissue These so-called tumor-like lesions are not fibromas, they are more atrophic

DR KRING The lesion looks like a lipoma

DR TOBIAS A similar lesion is described in von Recklinghausen's disease, but is due to involuted fibromas I should certainly classify this condition as multiple tumor-like benign new-growths of the skin, as described by Schweninger and Buzzi in 1892, and later by Pusey in 1917 and Schweitzer in 1923 Schweitzer believed this condition to belong to the group of idiopathic macular atrophies There is no history of syphilis or any eruption preceding this condition

DR GRINDON What about the woman's mentality?

DR TOBIAS The presence of the tattoo on the arm might classify her as a psychopath, and the case as a so-called borderline condition I do not think it has any bearing on this condition

BOWEN'S DISEASE Presented by DR LANE

R M, a white man, aged 66, complained of "spots" on the body for the past four years, which did not heal but which had not increased much in size There were no subjective symptoms There was no history of trauma The only positive observation in the history was of a chancre of the penis thirty-five years before presentation The treatment employed had been oral medication and local applications Four years previously, the Wassermann reaction of the blood was negative

There were five definitely demarcated, discrete lesions distributed as follows (a) medial border of the right scapula, (b) medial border of the left scapula, (c) midsternum, (d) lower left abdominal quadrant and (e) left inguinal region These were all the same type of lesion, though the changes in appearance were due to local irritative and pressure factors All except a patch on the chest were deep red, that on the chest being light brown The inner zones showed atrophy, whereas the borders showed definite, raised, irregular bands the thickness of darning thread There was no induration Many titlike elevations, varying in size from that of a pinpoint to that of a pinhead, were present on the surface of the patch on the sternum There were small crusts on the surfaces, which, when removed, revealed punctate bleeding points The two patches on the scapulae and that on the abdomen were slightly depressed below the surrounding skin

DISCUSSION

DR BROCKELMANN I would suggest a diagnosis of Paget's disease

DR KRING The condition appears to be Paget's disease

DR BROWN I make a diagnosis of multiple epitheliomas of the skin There is a considerable difference between this and Paget's disease I believe this is a case of multiple epitheliomas

DR DAVIS Fraser of New York discussed the same type of case recently and clinically and microscopically showed that Bowen's disease is epithelioma

DR GRINDON Dr Kring and I saw a case recently that was almost the exact counterpart of this Later, the woman died from tumor of the brain

ORAL PEMPHIGUS Presented by DR SNIDER

A G, a white man, aged 58, complained of a sore mouth which began three years before presentation as blisters on the upper gum He had fever with the onset and was confined to bed for three months This process gradually spread, involving the entire mouth He was treated by various physicians without noticeable improvement He smoked and chewed tobacco excessively, but had not used tobacco since the onset of the present condition The mouth was extremely tender and painful, and there were frequent slight hemorrhages He had been on a liquid diet for the past two years

The mucous membrane of the entire buccal cavity, including the gums, the lateral and anterior surfaces of the tongue and the lips, were involved These areas were deep red and glossy with scattered ulcerations varying in size from that of a pinhead to that of a penny Patches resembling those of leukoplakia involved both commissures of the mouth and extended laterally along the buccal mucosa There was a similar patch on the left lateral aspect of the tongue Biopsy showed a chronic inflammatory tissue The Wassermann reaction was negative Smears for tuberculosis and Vincent's disease were negative The blood showed red cells, 3,900,000, white cells, 7,100, polymorphonuclears, 69 per cent, lymphocytes, 23 per cent, and large mononuclears, 8 per cent The urine was normal

DISCUSSION

DR GREINER The condition looks more like a beginning pemphigus today than at previous presentations

DR KRING I hesitate to make a definite diagnosis

DR LANE The picture is practically the same as before We merely brought the patient in to show that to date there have been no bullae on the surface of the skin No active treatment has been employed but it is to be instituted immediately

DR DAVIS The Pels test showed the blood as toxic, which, as I understand, means that the condition is probably pemphigus

DR TOBIAS Early pemphigus of the mouth is sometimes difficult to diagnose from precancerous conditions Apparently, this case is an atypical pemphigus of the mouth

PHENOLPHTHALEIN ERUPTION Presented by DR SNIDER

H G, a white man, aged 44, married, said that three weeks previously a breaking out appeared suddenly on the hands and feet accompanied by pain and soreness in the arms and legs The eruption spread to the body and head One week before the eruption appeared, the patient took six quinine tablets for a cold Examination showed an eruption which involved the scalp, neck, shoulders, scapulae, waistline, buttocks and flexor and extensor surfaces of the upper and lower extremities as well as the palms and soles The lesions were symmetrical and grouped, and consisted of red wheal-like papules of various sizes Some of the lesions had clear centers and were round, oval and crescent-shaped Others had coalesced, forming large plaques

DISCUSSION

DR GREINER The condition is a drug eruption

DR BROCKELMANN I agree with Dr Greiner

DR LANE Today the condition looks more like a phenolphthalein eruption, when first seen, however, the eruption consisted of incomplete rings and wheal-like papules, giving the typical picture of erythema urticans This condition is

accompanied by painful, tender and slightly swollen joints, so that an internal toxic disorder must still be considered

DR TOBIAS I think it is a phenolphthalein eruption of the erythema multiforme type It will leave considerable pigmentation which will last for some time

AINHUM Presented by DR SNIDER

A colored housewife, aged 48, said that seventeen years before presentation she applied corn salve to a corn on the little toe of the right foot The corn disappeared, leaving some soreness in the toe Four months prior to presentation, the same toe was run over by a hand truck, this caused considerable pain

Examination revealed a constricted scarlike band, 8 mm wide, encircling the proximal phalanx of the little toe of the right foot The circumference of this area was 1 cm less than that of the little toe of the other foot The distal portion of the toe was markedly enlarged and flexed on the constricted portion

DISCUSSION

DR GREINER I do not know what the condition is, unless it might be ainhum

DR BROCKELMANN It may be a localized infection

DR KRING I have never seen a case of ainhum, but I have read of cases I would not call this a typical case

DR BROWN The condition resembles ainhum but looks more like a fungus infection The constriction does not seem to go around the toe like a rubber band as in ainhum An ordinary fungus infection might produce something like this

DR LANE The diagnosis of ainhum was made in this case after a process of exclusion and because clinically it has the features of that disorder There is a history of injury, but no scar could be seen X-ray pictures revealed no pathologic condition of the bone The results of all laboratory tests, including the Wassermann test were negative There is a constricting band encircling the toe, so that the picture appears to be one of ainhum

DR GRINDON I have never seen a case of ainhum, but from the pictures I have seen and descriptions I have read, I would say it was not ainhum

DR TOBIAS I think ainhum includes a great many conditions of the little toe, probably a lot of conditions which have been called ainhum are not the ainhum of the Portugese and French

DR DAVIS I never saw a case of ainhum From the descriptions in the textbooks, I would hardly say that the condition shown was this disease I would agree with Dr Brown A secondary pus infection is probably added

CLEVELAND DERMATOLOGICAL SOCIETY

H J PARKHURST, M D, *Reporter*

Regular Meeting, Jan 24, 1929

C G LARocco, M D, *Presiding*

MULTIPLE GUMMAS Presented by DR COLE and DR DRIVER

C P, a man, aged 45, had had an untreated penile sore twelve years previous to presentation, there was no history of a secondary eruption Two years later an ulcerative process had appeared on the right shin, extending, it had persisted Subsequently the left hip had been involved, and at the time of presentation the entire cutaneous surface was covered by a reniform area with a scarred center

and ulcerating border The Wassermann reaction of the blood and spinal fluid was strongly positive, and the patellar reflexes were exaggerated

CONGENITAL SYPHILIS ARTHRITIS AND INTERSTITIAL KERATITIS Presented by DR COLE and DR DRIVER

J B, a girl, aged 5, presented bilateral interstitial keratitis, and also a fusiform swelling of the knees of one month's duration There was little pain about the knees, or interference with function The amount of the synovial fluid was somewhat increased Radiographic studies showed no bone changes The patient's father was apparently free from infection, but the mother and sister had strongly positive Wassermann reactions

P S, a man, aged 18, had noticed an impairment of vision in the right eye for several years, and especially during the month before his presentation Two months previously the right knee had been twisted during a football game, a persistent, almost painless swelling had appeared Since that time the left knee had been similarly affected The amount of synovial fluid was increased, and its Wassermann reaction was strongly positive, as was that of the blood There was a bilateral interstitial keratitis, most pronounced in the right eye The spinal fluid was normal Both of these cases were presented as examples of chronic synovitis in congenital syphilis, as described by Clutton

ECTHYMA Presented by DR COLE and DR DRIVER

J M, a railroad laborer, aged 38, presented many large, moderately indurated and crusted lesions on both legs, of six months' duration There was slight itching occasionally A pine tar cough syrup had been taken at times, in small amounts, and there was no history of other medication No bromine was found in the urine

LUPUS VULGARIS Presented by DR COLE and DR DRIVER

G C, a girl, aged 7, presented ulcerations in the nose and mouth, of seventeen months' duration, and crusted, erythematous areas on the face, of ten months' duration The general health was good, and radiographic studies showed no active pulmonary tuberculosis The reaction to tuberculin (1 1,000) was positive Radium had been applied locally, and ultraviolet light to the entire body, gold sodium thiosulphate was being given intravenously This case had been presented at the meeting of December, 1928, and has been reported in the *ARCHIVES*

DISCUSSION

DR COLE We used gold therapy in this case on the strength of some reports of success in tuberculosis But this treatment has not proved successful, and we shall discontinue it

PEMPHIGUS (SENEAR TYPE?) Presented by DR COLE and DR DRIVER

R W, a boy, aged 7, presented many superficial, discrete, coin-sized crusted patches, of general distribution, together with some scarring, and resultant distortion of the mouth and eyelids The condition was of two and a half years' duration, and there had been bullous outbreaks, with the picture of an acute pemphigus, the face, hands, feet and genitalia being the sites of predilection These crops of bullae had been appearing less frequently than at first, and the patient had been ambulatory and had grown and gained in weight The blood picture had never been remarkable The Davis treatment, blood transfusions, roentgen and ultraviolet therapy, emollients and potassium permanganate baths had been used

DISCUSSION

DR BARNEY The appearance of the face now suggests an acutely inflammatory seborrheic dermatitis, and I feel that the case falls in the class described by Senear At times there have been large bullae on the skin and mucous surfaces Gold therapy should be tried

DR COLE At first this case was considered one of typical pemphigus, but it has gradually changed and is now apparently typical of Seneat's cases. Apparently treatment with gold compounds seems to have some effect in such cases.

DR FISHER I have had one of these patients under treatment, and did not note much improvement under treatment with gold compounds.

PERIFOLLICULITIS CAPITIS ABSCEDENS ET SUFFODIENS Presented by DR BARNEY

J S, a negro, aged 20, had been presented before the society in December, 1928 (reported in the ARCHIVES). No tubercle bacilli or vegetable parasites had been found in smears, nor could the latter be found in cultures. The organism found in culture was *Staphylococcus aureus*. Tissue from an active lesion had been injected into a guinea-pig. There was no evidence of pulmonary tuberculosis, and the Wassermann reaction was negative. Three intramuscular injections of nonspecific milk preparation (5, 10 and 15 cc) had been given, together with roentgen therapy, and there had been definite improvement.

DISCUSSION

DR PARKHURST This appears to be a typical case, clinically and histologically. The giant cells suggest tuberculosis, but they may also be present in a low-grade pyogenic infection, and I feel that the staphylococcus may be the causative organism.

DR BARNEY Wise mentioned a structure simulating tuberculosis, but animal inoculations have been negative.

DR NETHERTON What treatment has been used in this case?

DR BARNEY I have used semi-intensive roentgen therapy and foreign proteins.

A CASE FOR DIAGNOSIS Presented by DR COLE and DR DRIVER

J L, a boy, aged 9, in good general health, presented a sparse generalized eruption of unknown duration, consisting of isolated, pinhead-sized, erythematous follicular papules. The sites of predilection were the back of the trunk and the extensor surfaces of the extremities.

DISCUSSION

DR DRIVER This is apparently an exaggerated keratosis pilaris, seen in children with dry skin.

DR GIBANS The possibility of keratosis follicularis must be considered.

DR PARKHURST I do not agree with a diagnosis of keratosis pilaris. Although there is no grouping of lesions, the eruption is suggestive of lichen spinulosus.

DR COLE It is not keratosis pilaris, and the localization is not that of keratosis follicularis.

ACNE AGMINATA Presented by DR NETHERTON

R L, a man, aged 31, a street car conductor, said that in August, 1928, he had cut his face while shaving and had applied a styptic pencil. Within a day an acute dermatitis had involved the entire face. As the dermatitis subsided, small "pimples" appeared on the face and forehead. At the time of presentation there were many large brownish red papules, definitely grouped, especially on the mid-forehead, chin, cheeks and nose, and varying in size from that of a pinhead to that of a split pea. A few lesions were confluent. All were slightly scaly, and a few had small adherent central crusts. Some showed a small central yellow point resembling a pustule, from which no pus could be obtained. Central yellow spots were also demonstrable under the diascop. There were no

comedones, and no telangiectasia. On the cheeks there were several small, depressed, pigmented scars. A few small nodules, scattered over the shoulders, were apparently a part of the eruption. No biopsy had been permitted.

DISCUSSION

DR COLE. This man was formerly our patient, and examination of the biopsy specimen revealed a typical acnitis.

POIKILODERMA ATROPHICANS VASCULARE (?) Presented by DR LAROCO and DR CUMMER

Mrs A. M., aged 35, presented a symmetrical, dusky red and hyperpigmented, finely scaling eruption on the face, neck, upper part of the chest, back and arms of seven years' duration. There were burning and itching sensations. There was a fine, scaling, erythematous network, with atrophy and many telangiectases. There was a history of many roentgen treatments over these areas. Results of a physical examination were practically negative. No examination of the biopsy specimens had been made.

DISCUSSION

DR LITTMAN. This may be a case of pellagra.

DR BARNEY. There is a history of an initial dermatitis and numerous roentgen treatments. This appears to be a radiodermatitis.

DR PARKHURST. The gauntlet-shaped dermatitis, glossitis and other parts of the pellagra syndrome are lacking. Also, the symmetrical distribution of the atrophy and telangiectasia and the extensive growth of hair in the involved areas speak against a diagnosis of radiodermatitis. Infiltration may occur in poikiloderma, and the picture resembles radiodermatitis. I feel that this is a case of poikiloderma.

DR FISHER. I favor a diagnosis of atrophic lichen planus.

DR GILLESPIE. There are signs of eczema about the neck and ears. The patient gives a history of roentgen treatments all of one winter for an itching eruption. It would be possible to have this amount of radiodermatitis without permanent loss of hair. I favor a diagnosis of radiodermatitis.

DR COLE. This woman was formerly our patient. The extreme symmetry is against radiodermatitis. There is atrophoderma of the lesions on the arms also. The condition is characterized by new blood vessel formation and pigmentation, and I am inclined to accept the diagnosis of poikiloderma.

DR LAROCO. We shall perform a biopsy and report the observations later.

A CASE FOR DIAGNOSIS Presented by DR COLE and DR DRIVER

E. E., a man, aged 62, a cigarmaker, presented several tumors on the scalp, varying in size from that of a bean to that of a walnut, of eight months' duration. They had gradually enlarged and multiplied, without subjective symptoms. They were red, and the overlying skin was adherent to some of them. The largest tumor presented telangiectases. There was a left cervical lymph node the size of a walnut, and another in the right groin. Radiographic studies showed no enlargement of the mediastinal lymph nodes. The left tonsil was enlarged. There was marked edema of the genitalia, following an attack of influenza two weeks previously. There was also a varicose ulcer of the leg.

DISCUSSION

DR NETHERTON. The tumor on the scalp may have been a primary sarcoma, with metastases developing. The edema of the penis suggests the possibility of an intra-abdominal growth.

DR FISHER. I would suggest a diagnosis of Hodgkin's disease with skin manifestations, and would advise a biopsy.

DR COLE Several things must be considered among them, leukemia, in which edema of the penis sometimes occurs, and lymphosarcoma I shall report the biopsy observations later

A CASE FOR DIAGNOSIS Presented by DR COLE and DR DRIVER

A white woman, married, aged 35, had had a generalized macular eruption and a strongly positive Wassermann reaction in June, 1928 The eruption had disappeared under antisyphilitic treatment In September, 1928, an erythematous maculopapular eruption had appeared on the face, forehead, forearms and hands The lesions tended to clear in the center, and some were confluent On the palms and soles were horny circular lesions All of the lesions were indurated

DISCUSSION

DR MISKJIAN I would suggest a diagnosis of toxic erythema It is apparently not disseminated lupus erythematosus

DR RAUSCHKOLB The patient has had continuous antisyphilitic treatment since June, 1928 This eruption has been present since September, 1928

DR COLE The palmar lesions suggest syphilis

DR DEWOLF The scaling patches on the ears favor a diagnosis of lupus erythematosus

DR GILLESPIE There is too much infiltration for erythema multiforme I agree with a diagnosis of lupus erythematosus

DR NETHERTON I agree with a diagnosis of lupus erythematosus

DR PARKHURST I agree with a diagnosis of lupus erythematosus

ARSENICAL KERATOSIS, EPITHELIOMA Presented by DR COLE and DR DRIVER

W M, a man, said that he had had an eruption twenty years previous to presentation, for which he had taken medicine internally There were many pinhead-sized, hard, black keratoses on the hands and fingers, and on the left palm was a round ulcer, with indurated border, about 1.5 cm in diameter, of twenty months' duration

CONGENITAL SYPHILIS Presented by DR COLE and DR DRIVER

A new-born white male infant presented a generalized copper-colored macular eruption, most marked in the diaper area There were also vesicles suggestive of varicella, and some crusted lesions Snuffles were absent The liver and spleen were palpable, and the Wassermann reaction was strongly positive

ERYTHEMA MULTIFORME Presented by DR COLE and DR DRIVER

J R, a man, aged 26, complained of a sore throat and "cold in the head," of several days' duration On the upper extremities were serpiginous lesions with smooth red papular borders and clear centers There were no subjective symptoms

RADIODERMATITIS Presented by DR FISHER

Miss M C, aged 22, had had twenty-five treatments by the "Tricho System," because of a moderate hypertrichosis of the cheeks and chin At the end of one and a half years telangiectases were noticed, but the treatment was continued The last treatment was given in March, 1928 There was telangiectasia of the chin and adjacent parts of the cheeks and neck, and on the left side of the chin was a painful button-like nodule, with depressed center

A CASE FOR DIAGNOSIS Presented by DR COLE and DR DRIVER

Mrs M aged 38 presented a large coin-sized, irregular, indurated erythematous squamous patch on the right cheek, of eight years' duration There was

some fissuring of the patch, and a suggestion of follicular plugging at the upper inner border. She had seen many physicians, and had been treated with ointments, solid carbon dioxide, roentgen rays, radium and arsphenamine, all with little or no benefit. There had also been two injections of gold sodium thiosulphate. A histologic specimen was shown.

All of the finger-nails and the great toe-nails were dark colored, dystrophic, and furrowed with many longitudinal striations. The free borders were irregular. This condition of the nails was said to have been present since infancy, and was said to have been present in no other member of the family.

DISCUSSION

DR PARKHURST. The depth of the infiltration suggests lupus vulgaris rather than lupus erythematosus.

DR COLE. The histologic picture is that of lupus erythematosus.

LUPUS ERYTHEMATOSUS RECURRING AFTER GOLD THERAPY. Presented by DR COLE and DR DRIVER

Miss L. B., aged 18, had first noticed erythematous patches on the left cheek in January, 1926. In April, 1926, typhoid vaccine was given intravenously, and the lesions disappeared. They recurred in a few months, and eight injections of gold sodium thiosulphate were given, ending in September, 1928. The patches again vanished, but reappeared in December, 1928. There was one on the left cheek, 3 cm. in diameter, and several smaller lesions on both cheeks, one of which showed central atrophy. There were two large erythematous patches on the hard palate.

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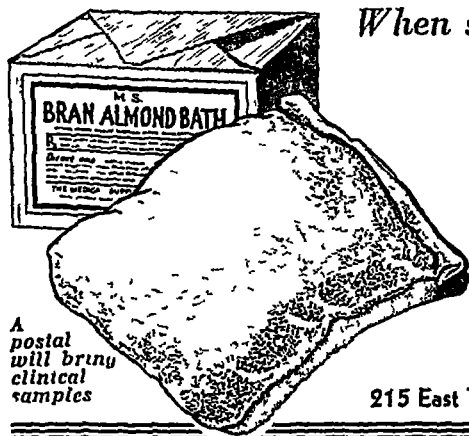
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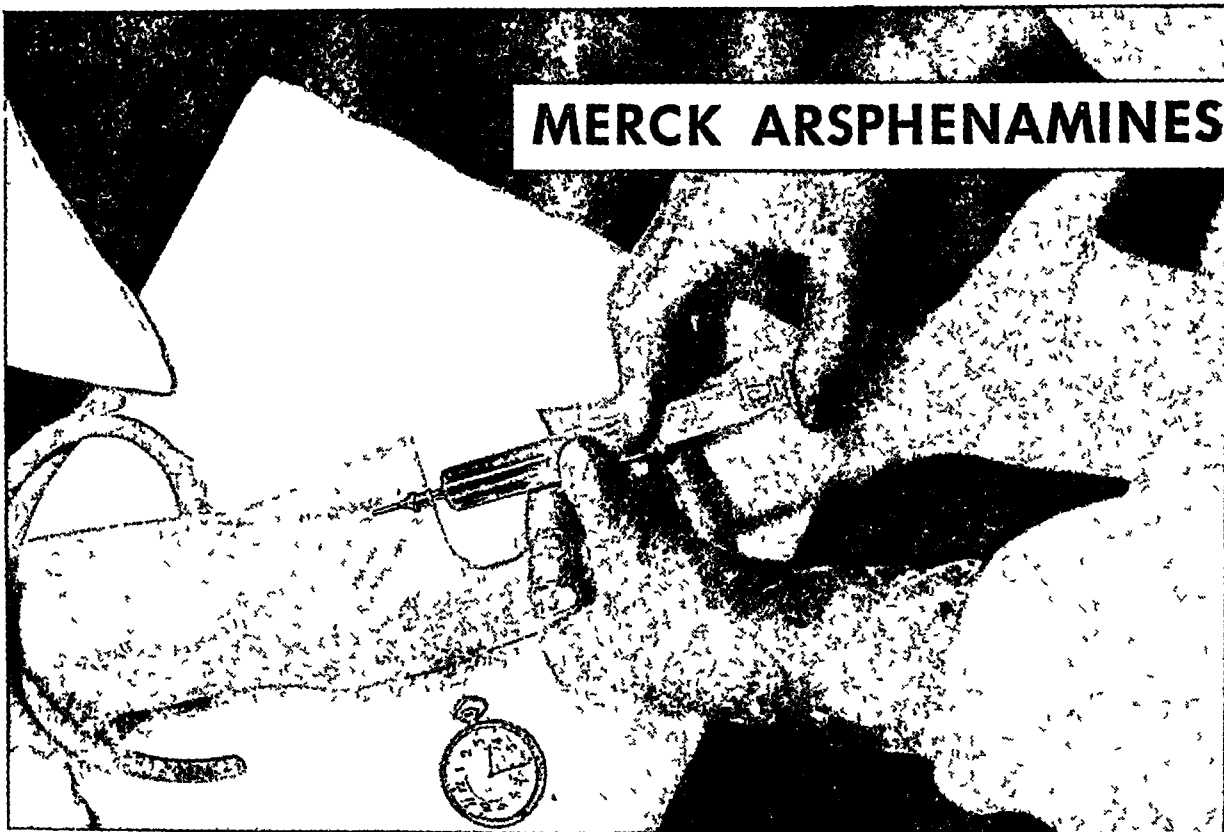
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HIDROSADENITIS AXILLARIS OF VERNEUIL

J E LANE, MD†

NEW HAVEN, CONN

Hidrosadenitis of the axillary glands was probably first described by Velpeau, who called it "abcès tubéreux de l'aisselle. The name "hydrosadénite phlegmoneuse" was given it by Verneuil in 1864. He had described it previously, as had Richet, Nélaton and Chassaignac.

The disease is not uncommon, and it presents a definite clinical picture, but it is apparently not very well known, probably because it is hardly mentioned in most works on surgery in the English language, and is not mentioned, or is only briefly described, in many of the textbooks on dermatology.

This paper summarizes what I have been able to find on the subject in the medical literature. It is incomplete because I have been disappointed in having seen no cases of hidrosadenitis since I discovered that so few and so inconclusive studies have been made on the question of its origin in the sweat glands.

Hidrosadenitis is found most frequently in the axillae, but it is occasionally seen about the anus, in the areolae, and on the scrotum and labia majora. This discussion is confined to hidrosadenitis of the axillae, as that is the only location in which I have seen it. I have seen it only in women, but it occasionally occurs in men.

CLINICAL APPEARANCE

It is unusual to see the development of the disease from its start as it gives little trouble at first. The course of development of new lesions, however, makes clear the usual sequence of events. One or two or more hard nodules, rarely larger than a pea, are felt accidentally in the axilla. An increasing number of nodules, with some discomfort, brings the patient to the physician. By this time there are usually half a dozen or more nodules. Verneuil's description of the progress and appearance of the disease will serve as well as later ones.

At first slight mobile subcutaneous induration, rolling under the skin and between the fingers, spontaneous pain and pain on light pressure, very little or no elevation, no appreciable redness. This lasts three or four days. Then the tumor begins to get larger, it advances to the skin which in its turn is inflamed and becomes adherent, a slight redness is seen and pressure becomes painful.

† Dr Lane died Oct 17 1933

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Some spontaneous pains appear and are exaggerated by movement of the arm. The tumor is still very hard, no sign of fluctuation is found, there is only glandular swelling, resolution is still possible, and is not very rare.

But suppuration often follows, the elevation increases in size, the skin becomes thinner and turns a dusky red, the epidermis begins to exfoliate. In the center of the induration a softer spot is seen. The redness extends somewhat. Pain is sometimes sufficiently sharp to restrain the mobility of the arm, and the difficulty of lifting it from the side of the body makes observation difficult.

Fluctuation is difficult to obtain because of the small quantity of fluid accumulated.

If incisions with the point of a lancet are made at the top of the elevations a few drops of thick, viscous pus come out, escaping in the shape of a flat, coherent ribbon, like the semiliquid contents of the collapsible tubes of paint used by artists. Immediate relief follows this little operation. A few hours, or at most, a day later, suppuration has stopped, and only a few drops of viscous serum are with difficulty seen running out. The redness in the center and at the edges fades out. But the induration seems hardly affected by this evacuation. It begins to resolve only after two or three days, and as it subsides, follows the same course as during its period of growth, that is to say, it detaches itself from the skin and becomes free in the subcutaneous tissue, where it may be perceived for a long time—ten, fifteen, twenty days and even longer.

This is the usual course of events. If the condition is neglected there is usually spontaneous rupture through the skin. Verneuil reported cases in which rupture was not external but into the loose tissue of the axilla, forming large abscesses there. As noted by Verneuil, the evolution of each nodule takes about two weeks, but as new ones keep appearing the process may extend over several months.

LOCATION OF ABSCESES IN SWEAT GLANDS

Verneuil made no histologic studies in his cases, and in 1854, when he suggested that the sweat glands were the site of the abscesses, he said "I make this observation only with reservations, for it is chiefly the curious distribution of these collections that made me adopt the interpretation which I give here. It is therefore a point to be restudied and to be demonstrated in a more satisfactory manner." In his later papers he seemed convinced that the location of the abscesses was in the sweat glands.

There have been few histologic studies of hidrosadenitis, and the results do not agree sufficiently to settle the question of the origin of the abscesses in the sweat glands.

Torok, who made some studies in 1902, concluded "Perhaps I gained the impression that the pathological process indeed is located chiefly in that layer of the skin which incloses the glomeruli of the sweat glands but that from the beginning it is in no wise connected (*gebunden*) with the sweat glands."

These results were practically confirmed by Talke in 1903 and by Rost in 1922. They found the epithelium of the sweat glands normal.

in the early stages, and only in the later stages of the inflammation were the glands infiltrated with pus cells. Rost proposed the theory that the infection was carried by the lymph channels and that it affected first the interstitial tissue and secondarily the stroma of the glands.

In 1924, Rutz came to the opposite conclusion. He stated.

Our microscopic investigations gave the following clear findings. In early cases we found the epithelium of the sweat glands infiltrated with leukocytes, the glandular epithelium broken down and in process of desquamation. The lumen was free. The interstitial tissue around the sweat glands was entirely free of leukocytes, and the subcutaneous tissue and the sebaceous glands were not touched by the infection.

In late cases the sweat gland still remained in the center of the inflammatory process. . . . We always found a group of sweat glands closely filled with leukocytes, with diffuse infiltration of the periglandular tissue.

The infiltration gradually became less dense as the distance from the glands became greater. The ducts were sometimes free but, for the most part, were filled with polymorphonuclear leukocytes.

Whether the infiltration was an inflammatory reaction in the periglandular tissue or pus breaking through the thin wall of the gland is hard to say. We, however, incline to the latter opinion.

But in all cases, we believe that the beginning of the inflammation is in the sweat gland itself.

Gans' studies led him to the conclusion that the invasion of the sweat glands follows infection of the interstitial connective tissue and of the lymph channels.

An interesting point which seems to be more than a coincidence is the fact that hidrosadenitis occurs only in the regions of the body in which apocrine glands are found. The apocrine glands, to which this name was given by Schiefferdecker in 1922, are a variety of sweat glands differentiated from the other sweat glands (eccrine glands) by their morphology, secretion, development and incidence. They arise from the primary epithelial germ in association with the hair follicle, as do the sebaceous glands, but from a different part of the epidermis. Their secretion contains cytoplasm plus secretory products, and there is a clearcut cycle of secretion. In man these glands are found in the axilla, around the nipple and the pubis, labia majora and scrotum.

Dr. Harold S. Burr, Professor of Anatomy in the School of Medicine of Yale University, has given me assistance in the interpretation of Schiefferdecker's findings and hopes to carry on further investigations of these glands and, when the opportunity arises, of the question of the origin of hidrosadenitis in them.

In this connection, it may be mentioned that Darier is of the opinion that Fox-Fordyce disease, formerly considered a variety of prurigo nodularis, should be classed as a disorder of the sweat glands. He gave the following reasons:

It is almost entirely confined to the female sex, is essentially regional, is found in the axillae, on the pubis and labia majora, in the perineum around

the nipples and sometimes near the umbilicus, in a word, in the locations where apocrine glands are found

At first this disease appeared to most authors, and still appears to some, to be a variety of *neurodermite*. As in *neurodermite*, histologic examination shows acanthosis, hyperkeratosis and periglandular and perivascular infiltration. But in addition there is found marked, sometimes cystic, dilatation of the apocrine glands

ETIOLOGY

The location in which hidrosadenitis occurs is favorable for infection. The lesions have the clinical appearance of staphylococcic infection, and though I have found no detailed study of that question, the statements that have come to my notice are that the staphylococcus is usually found

It is not surprising that the sympathetic nervous system has been invoked as a contributing etiologic factor. Rutz expressed the belief that the infection "is favored by a constitutional component sympatheticotonia"

DIAGNOSIS

The appearance and course of development of hidrosadenitis are so typical that there is no difficulty in recognizing it. The common furuncles or larger abscesses are much more painful and deeper and usually do not occur in large numbers, when they are opened there is a plentiful discharge of pus, followed by a later slough of necrotic tissue. With hidrosadenitis there is usually little or no fever.

Only a word need be said as to the confusion of names. The clinical description of hidrosadenitis as given by Verneuil was so similar to that of some of the tuberculids that at first they were considered varieties of hidrosadenitis. This led Pollitzer to give the name "hydradenitis destruens suppurativa" to the lesions now called papulonecrotic tuberculids. In like manner, Dubreuil called them "hydradénites suppuratives disséminées". At about the same time Barthélemy gave the name "acnitis" to similar lesions. As these tuberculids are now well recognized and occur in totally different regions, the names alone are confusing.

TREATMENT

Many treatments have been suggested. Vaccines or foreign proteins seem to have given no favorable results.

In thirty-one cases in various stages Rutz obtained good results with roentgen therapy, which he recommended in all stages of the disease. Peyser said that this method may be tried and that it is useful in early cases but that it is not always successful. Of course, ultra-violet radiation has been recommended, and also bacteriophage.

In the usual case my custom has been to keep hot compresses on the axillae part of the time and to incise the pustules when evidence of

pus is seen, or earlier if necessary to relieve the discomfort caused by tension. In one case under my observation, which was seen early, the condition subsided with no formation of abscesses following the use of hot compresses for several days. The induration was palpable for between two and three months before it finally disappeared.

In stubborn cases of long duration with continued relapses, it may be necessary to excise the skin of the affected area. In a few such cases, Dr W. F. Verdi has obtained good results by making an incision through the center of the affected area, turning back the skin, curetting out the nodules from below the surface and keeping the wound packed with gauze as long as necessary. Klug has used a similar procedure.

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EXCRETION OF BISMUTH IN A SERIES OF CLINICAL BISMUTH TREATMENTS

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The clinical efficiency of treatment with bismuth compounds in syphilis has been sufficiently demonstrated by all the available methods—by the clinical progress, by the disappearance of spirochetes from the lesions and by the reversal of the Wassermann reaction. However, these methods are not sufficiently sensitive to distinguish sharply the optimal conditions for the use of this treatment, such as the concentration and duration that may be required and the relative efficiency of different preparations. This limitation of clinical experience is reflected in the multiplicity of preparations, dosages and instructions for spacing of injections. It may be presumed that compounds which differ in solubility differ also in rapidity of absorption, and therefore of excretion, and in promptness and duration of action. If continued action is essential, as seems probable, too rapid absorption would necessitate frequent injections and very slow absorption would not only delay the effect but tend to produce cumulation and toxicity. It is therefore, desirable to study the course of bismuth through the body by quantitative methods. The absorption from the site of the injection may be judged by the thinning of the roentgen shadow, but this is of limited accuracy. Chemical analysis of the local tissues of animals killed at various periods after injection gives comparable data, but the anatomic conditions and the dosage are different from those observed in the clinic. Much more useful information can be obtained from patients. The most pertinent item is the concentration of bismuth in the blood plasma, but it is not feasible

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to secure samples adequate for analysis sufficiently frequently. However, since the intensity of the excretion of bismuth is determined chiefly by the concentration in the plasma, the urinary excretion especially is a fair index of the actively circulating bismuth, and this is probably the effective bismuth, for, as with mercury, the action seems to cease promptly after the administration is discontinued, when there are still considerable amounts of bismuth fixed in the tissues. A number of studies of clinical excretion have been published, the most extensive by Mehrrens, Hanzlik and their co-workers. The plan of the present inquiry differs in that a number of patients, generally at least three, were used for each condition studied, so as to obtain the normal variability as a measure of comparison for experimental variations. Detailed comparisons of other investigations therefore appear unprofitable at this time.

The general plan of the investigation was to administer the different types of bismuth preparations, generally in the approximate clinical dosage, though with some of the compounds several doses were compared. The excretion was studied for single injections, weekly injections for three weeks, and "multiple" injections, viz., two or generally three a week for three weeks. The excreta were collected for a short period before the first injection to check whether the patient was already excreting bismuth, and the collection was continued for two or three weeks after the last injection. The total urine of each patient was analyzed daily, the feces were generally combined for the week. The fecal output, which averages perhaps a tenth of the urinary output, will be considered in a later paper. The studies on these patients were limited to their stay in the hospital. They are being supplemented by studies of later after-periods on patients who return to the hospital several weeks or months after routine treatment.

BISMUTH COMPOUNDS AND DOSAGE

Thus far these investigations have been chiefly concerned with the following preparations and doses (per injection)

(A) Water-Soluble Salts in Water

Sodium bismuth tartrate, 42 mg (32 mg of bismuth) in 2 cc. Sodium bismuth citrate, 50 mg (32 mg of bismuth) in 2 cc. Also the same dosage of bismuth sodium citrate in ethylene glycol (2 cc.)

(B) Water-Soluble Salts Suspended in Oil

Sodium potassium bismuth tartrate, 50, 75 and 100 mg (32, 48 and 64 mg of bismuth) in 1, 1.5 and 2 cc.

(C) Water-Insoluble Compounds Suspended in Oil

Bismuth subsalicylate, 130 mg (75 mg of bismuth) in 1 cc.

(D) Oil Solutions of Liposoluble Compounds

Quinobine (quinine bismuth iodide dissolved in olive oil with lecithin), 60 mg of bismuth (2 cc) Bismo-cymol (bismuth camphocarboxylate), 75 and 100 mg of bismuth (1.5 and 2 cc) Biliposol (bismuth ethyl-methyl nonoate), 80 mg of bismuth (2 cc)

ANALYTIC METHODS

The determination of bismuth was performed by a colorimetric method similar to that described by Leonard,¹ which was used by Mehrtens, Hanzlik and Marshall.² It depends on the formation of a double salt of bismuth and potassium iodide, having a yellow color. The oxidation is accomplished by nitric acid and hydrogen dioxide. Amounts ranging from 0.5 to 0.001 mg of bismuth may be determined with an accuracy within from 0.001 to 0.005 mg. The method follows in detail.

Standards—First, 0.2327 Gm of bismuth nitrate is dissolved in dilute nitric acid and made up to 1 liter with water. One cubic centimeter of this solution contains 0.1 mg of bismuth. Known amounts of the solution are added to 5 cc of concentrated sulphuric acid and diluted with water to about 20 cc. After cooling, 4 cc of 1 per cent sodium bisulphate is added, and the volume is made up to 25 cc with water. Five cubic centimeters of 1.7 per cent potassium iodide solution is then added. The color thus given is matched in a colorimeter against an unknown quantity of bismuth prepared in the same manner.

Urine—Samples of from 25 to 100 cc of urine are digested by nitric acid in Kjeldahl flasks. The amount of nitric acid used is about 25 per cent of the volume of urine. When the solution is almost dry and light yellow, it is transferred to an evaporating dish and evaporated to dryness. The oxidation is completed from this point by heating over an open flame until the residue is white. Excessive heat must be avoided as bismuth is volatile at high temperatures. This residue is taken up with 5 cc of sulphuric acid and 5 cc of water and transferred to a Nessler tube graduated to 25 cc. The evaporating dish is rinsed with water and 4 cc of 1 per cent sodium bisulphate, the washings are added, and the solution is made up to 25 cc. Five cubic centimeters of a 1.7 per cent solution of potassium iodide is added, a yellow color develops, and the solution is ready for comparison.

Feces—Aliquot parts totaling approximately 300 Gm of the weekly samples are used. The sample is digested in a 2 liter flask on a sand bath, nitric acid and hydrogen dioxide being added at intervals. Early in the digestion the fat separates and rises to the top of the solution. When this is cooled it may be removed and ignited with sodium nitrate, the residue being dissolved in water and added to the original. This considerably shortens the time required for oxidation. The heating of the solution is continued, with additions of nitric acid and hydrogen dioxide, the volume being reduced by evaporation, until the residue is entirely white after the nitric acid is evaporated. The residue is suspended in about 400 cc of 5 per cent hydrochloric acid, and the bismuth is precipitated by hydrogen sulphide. The bismuth sulphide is collected on a filter and dissolved in nitric acid, the nitric acid is evaporated, and 5 cc of sulphuric acid is added. The determination then proceeds as that on urine.

1 Leonard, C. S. *J. Pharmacol. & Exper. Therap.* **28**:83, 1926.

2 Mehrtens, H. G., Hanzlik, P. J., and Marshall, D. C. *Proc. Soc. Exper. Biol. & Med.* **25**:276, 1928.

RESULTS URINARY EXCRETION OF BISMUTH FOR INDIVIDUAL PATIENTS

Charts 1 to 5 give a general picture of the phenomena, and as the graphs are drawn to scale they may also be used quantitatively. They are arranged according to the frequency of administration, generally in ascending order of excretion.

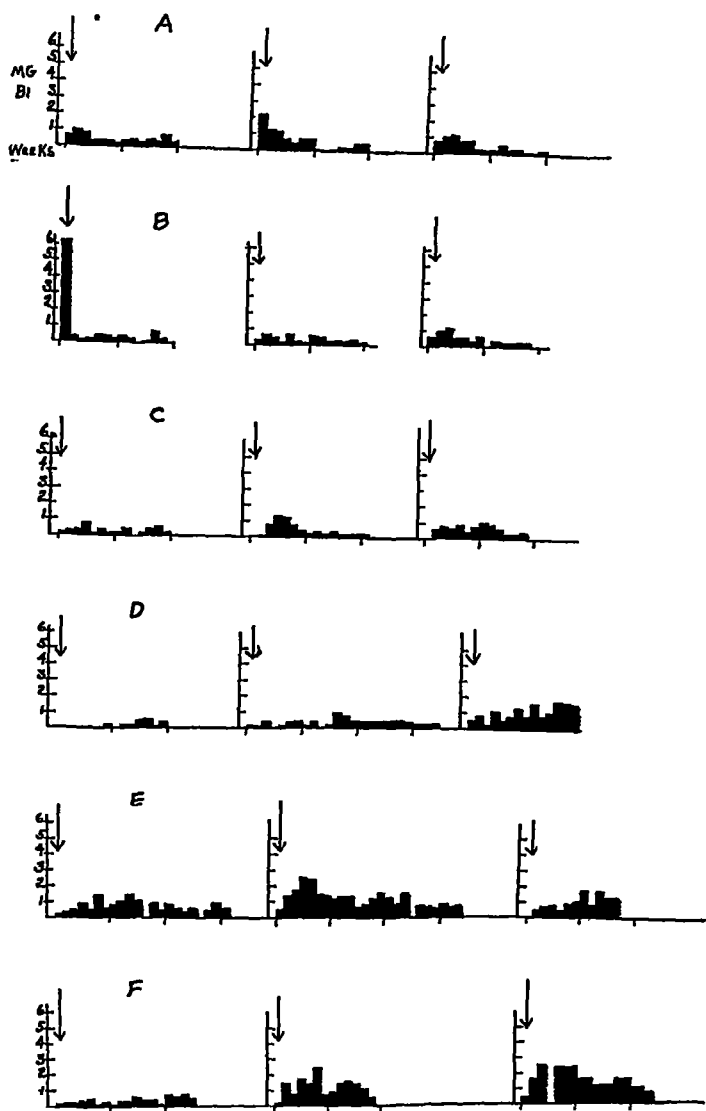


Chart 1—Urinary excretion of bismuth after single injections *A*, sodium bismuth citrate in water, 32 mg of bismuth per dose, *B*, sodium bismuth citrate in ethylene glycol, 32 mg of bismuth per dose, *C*, sodium bismuth tartrate in water, 32 mg of bismuth per dose, *D*, potassium sodium bismuth tartrate in oil, 48 mg of bismuth per dose, *E*, biliposol, 80 mg of bismuth per dose, *F*, quimobine, 60 mg of bismuth per dose. The graphs show the daily urinary excretion of bismuth in milligrams. The arrow indicates the day of the injection. The lines beneath the graphs indicate weeks. The same arrangement is used in the succeeding charts.

Chart 1 shows the effects of single injections, beginning with the water-soluble compounds *A*, sodium bismuth citrate in water, *B*, sodium bismuth citrate in ethylene glycol, and *C*, sodium bismuth tartrate in water. The dose corresponds to 32 mg of bismuth. The excretion curves for all the patients are similar in magnitude and type, reaching a peak in from one to three days, with an asymptotic decline, at first steep, then slow. The first patient in *B* has an unusually high peak, doubtless owing to accidental injection into a vein. *D* shows the results of injection of an oil suspension of the water-soluble potassium sodium bismuth tartrate (48 mg of bismuth). The excretion is similar in magnitude to that shown in *A*, *B* and *C*, but reaches its peak much more slowly, in one or two weeks. The curves, moreover, are more variable. These differences may be explained by the protective action of the oil film. *E* and *F* represent the effects of oily solutions, biliposol and quiniobine respectively. The type of the curve is altogether similar to that for the watery solutions, with a rapidly reached peak and a prompt initial decline. The excretion is somewhat higher, owing partly to the dose, corresponding to 80 and 60 mg of bismuth respectively.

Chart 2 shows the effects of weekly injections of bismuth subsalicylate suspended in oil. The first three patients, *A*, *B* and *C*, received 75 mg of bismuth for three injections, a total of 225 mg of bismuth to approximate the dose of the other preparations. The excretion level is low and rises very slowly, indeed, the maximum is not reached until two or three weeks after the administration has been discontinued. The curve then falls slowly, becomes horizontal at about a third or half of its maximal level and remains so practically indefinitely, or at least for several months. This course differs materially from that with the other bismuth preparations, but is really an exaggeration of the features produced by the oil suspension of the tartrate. It shows very slow but continued absorption, which means a delay in the therapeutic effects but cumulation with successive doses, with eventual intensive effects tending to chronic poisoning. In harmony with this, it is noted that most of the clinical toxic symptoms, stomatitis, dermatoses and nephrosis, occurred with this preparation. Therefore, in eleven patients who had received the routine therapeutic course the later course of the excretion was again studied, larger doses being given for longer periods, generally 150 mg of bismuth weekly to totals of from 540 to 4,125 mg during from eight weeks to fourteen months. Samples of urine were collected generally for about a week, at different periods after the administration had stopped, up to six months. The results are shown in chart 2, *D* to *N*, arranged in ascending order of the total dosage of bismuth in the last course. A median curve drawn through these (chart 2, *O*) shows close agreement, the dotted lines representing the extremes and the heavy line the median for all the patients. With these higher and

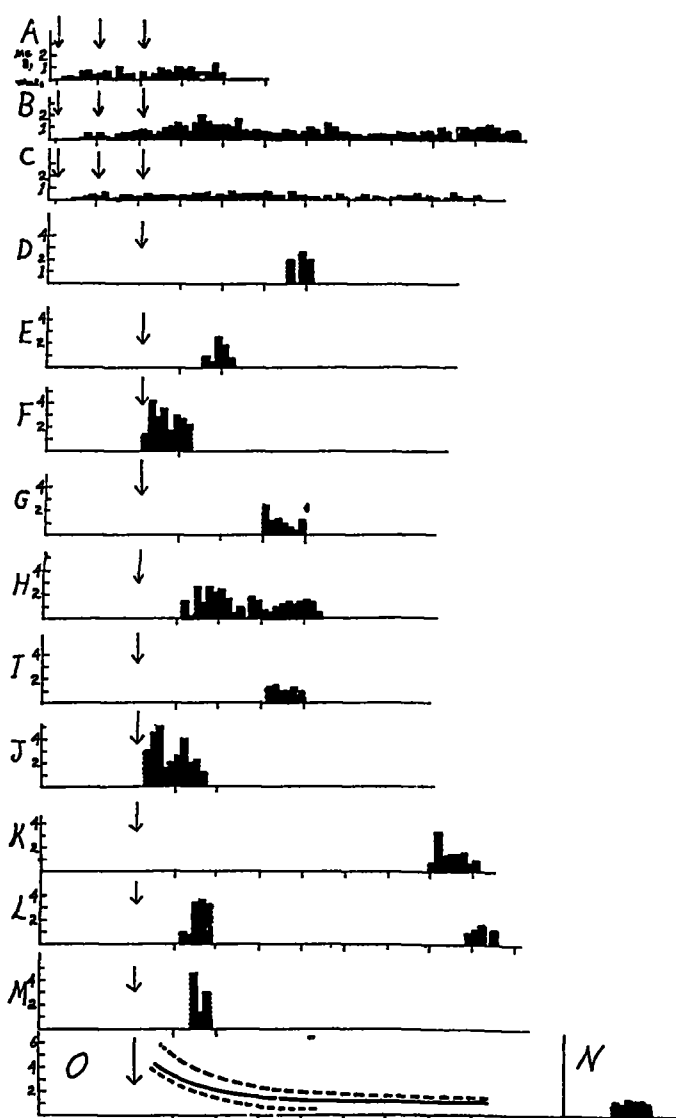


Chart 2—Urinary excretion of bismuth after injections of suspensions of bismuth subsalicylate in oil. In patients *D* to *N*, the arrows represent the time of the last injection. Patients *A*, *B* and *C* each received 225 mg of bismuth in three weeks. Patient *D* received 540 mg of bismuth in ten weeks, a dermatitis developed. Patient *E* received 1,650 mg of bismuth in two and a half months and six months later 600 mg of bismuth in four weeks, a total of 2,250 mg. Patient *F* received 1,275 mg of bismuth in nine weeks. Patient *G* received 1,275 mg of bismuth in eight weeks. Patient *H* received 1,500 mg of bismuth in ten weeks. Patient *I*, who had stomatitis, received 1,425 mg of bismuth in the form of salicylate and 152 mg of bismuth as thio-bismol in three and a half months, a total of 1,577 mg of bismuth. Patient *J* received 1,650 mg of bismuth in two and a half months. Patient *K* received 1,725 mg of bismuth in three months. Patient *L* received 1,750 mg of bismuth and six weeks later 600 mg, a total of 2,325 mg. Patient *M* received 4,125 mg of bismuth in fourteen months. Patient *N* received 1,850 mg of bismuth, excretion studies were made six months later. In graph *O*, the central curve represents the smoothed median of all the patients. The dotted lines define the extremes.

more prolonged doses, the bismuth level at the end of the course is fairly high, but the total dosage within this range seems to have no effect on the excretion, presumably the remains of the earlier injections become walled off in time. The most striking feature again is the indefinitely long course of the excretion, which is still notable at the end of six months. It may be added that the excretion of the patients

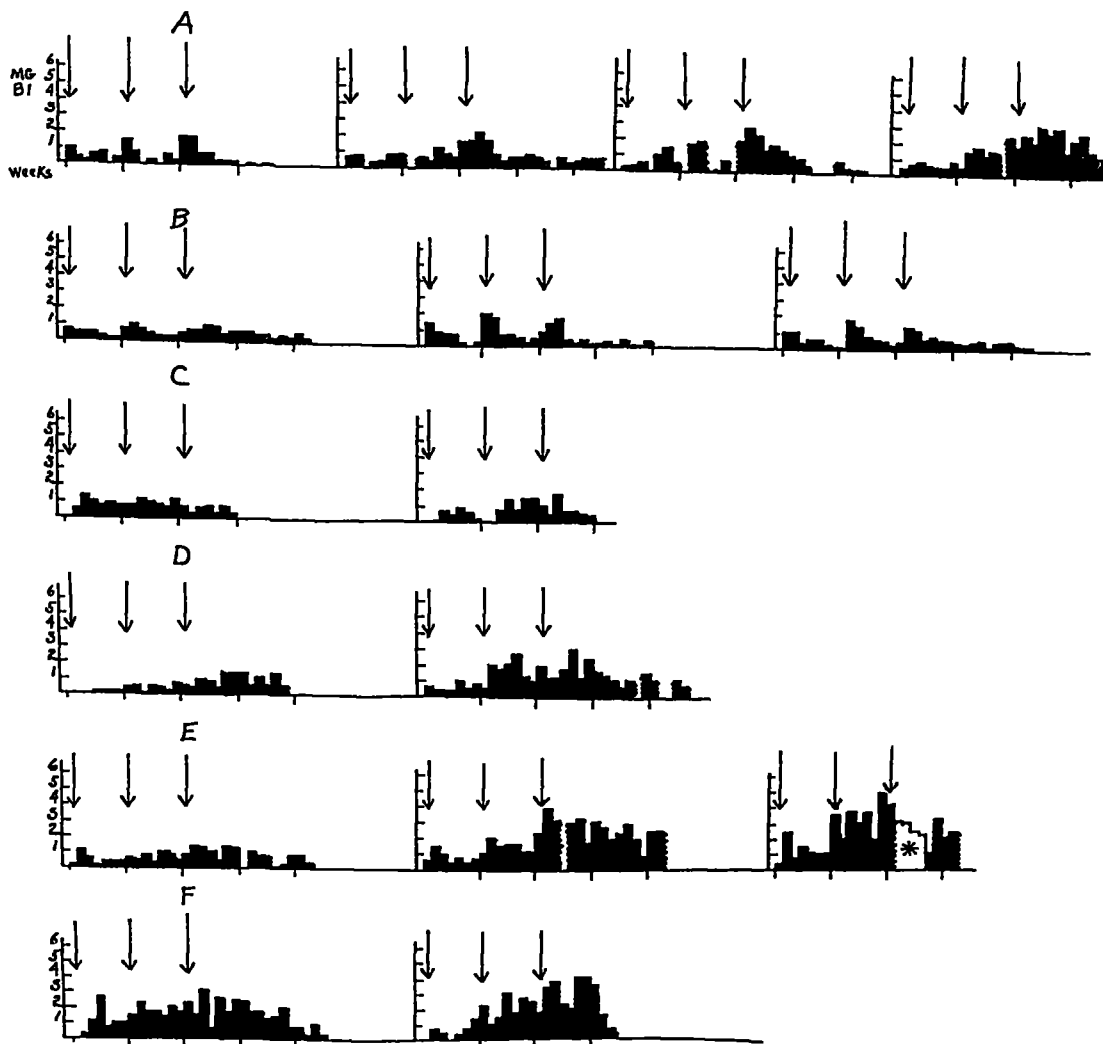


Chart 3—Urinary excretion of bismuth after weekly injections of water-soluble compounds. *A*, sodium bismuth citrate in water, 32 mg of bismuth per dose, *B*, sodium bismuth citrate in ethylene glycol, 32 mg of bismuth per dose, *C*, sodium bismuth tartrate in water, 32 mg of bismuth per dose, *D*, potassium sodium bismuth tartrate in oil, 32 mg of bismuth per dose, *E*, potassium sodium bismuth tartrate in oil, 48 mg of bismuth per dose, *F*, potassium sodium bismuth tartrate in oil, 64 mg of bismuth per dose.

with toxic symptoms did not differ quantitatively from the excretion of those without toxic symptoms.

Chart 3 shows the effects of weekly injections of the water-soluble compounds. *A*, sodium bismuth citrate in water; *B*, sodium bismuth citrate in ethylene glycol, and *C*, sodium bismuth tartrate in water.

Each dose contained 32 mg of bismuth, as in the experiments shown in chart 1. The curves are again essentially identical. They show a rapid ascent and a prompt sag after each injection. The second injection generally raises the peak considerably above that of the first, the third injection drives the peak still higher, except with the citrate in ethylene glycol, for which the third peak was slightly lower than the second. After treat-

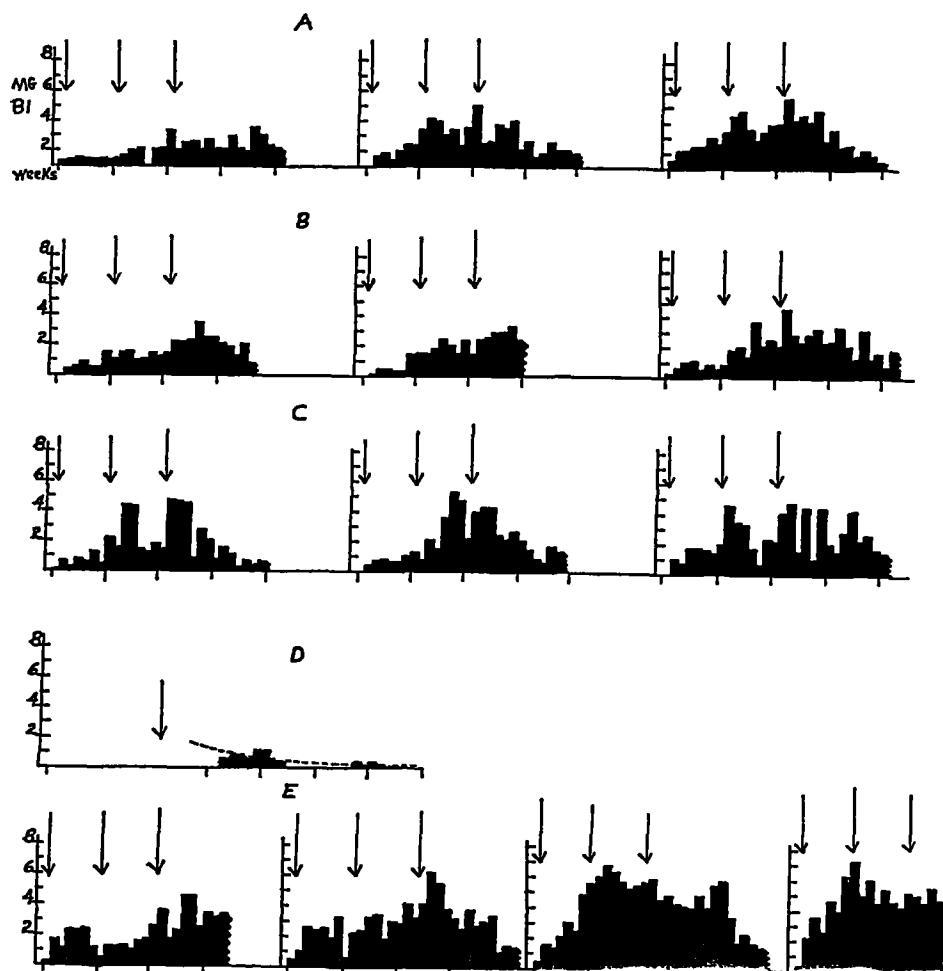


Chart 4—Urinary excretion of bismuth after weekly injections of oil-soluble compounds. *A*, quiniobine, 60 mg of bismuth per dose, *B*, bismo-cymol, 75 mg of bismuth per dose, *C*, bismo-cymol, 100 mg of bismuth per dose, *D*, bismo-cymol, after-period (the arrow indicates the last injection) with a total dose of 950 mg of bismuth (toxicity), *E*, biliposol, 80 mg of bismuth per dose.

ment is stopped the excretion falls rapidly in the form of a parabolic curve, just as with a single injection. Virtual zero would probably be reached in from thirty to thirty-five days. The tartrate in water produces a somewhat delayed peak, less sag between injections and a less rapid final descent, just as does a single injection of this solution.

again indicating a somewhat slower absorption. *D* shows the effects of the same dose (32 mg of bismuth) of potassium sodium bismuth tartrate suspended in oil. The excretion is similar to that caused by the watery solutions, but the descent is more gradual, the absorption being prolonged by the protective action of the oil film. *E* and *F* represent the effects of larger doses of the tartrate. A dose of 48 mg of bismuth (shown in *E*) gives considerably higher excretion, but 64 mg (shown

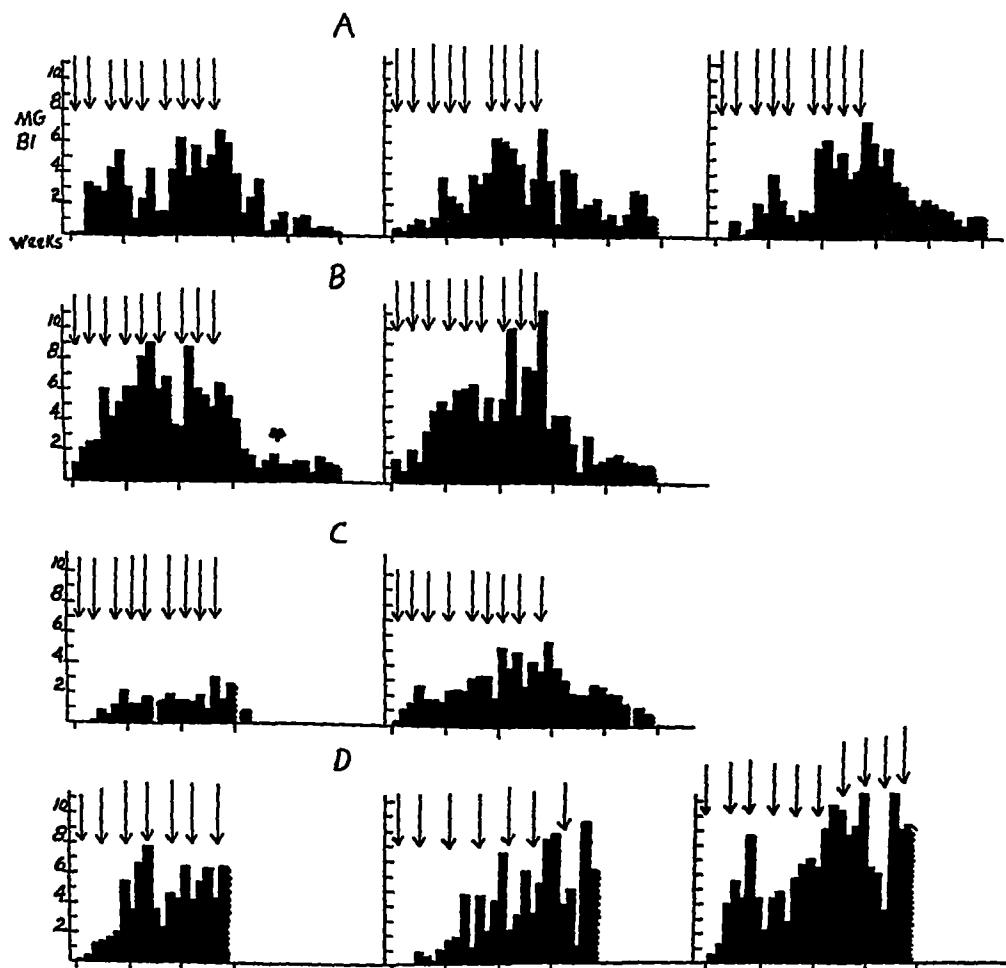


Chart 5—Urinary excretion of bismuth after multiple injections. *A*, sodium bismuth citrate in water, 32 mg of bismuth per dose, *B*, sodium bismuth citrate in ethylene glycol, 32 mg of bismuth per dose, *C*, sodium bismuth tartrate in water, 32 mg of bismuth per dose, *D*, biliposol, total dose 560 mg of bismuth (the first patient), 320 mg of bismuth (the second patient) and 800 mg of bismuth (the third patient).

in *E*) does not raise this further. All the oil suspensions show the characteristic slowing of the descent.

Chart 4 illustrates the effects of weekly injections of oil solutions. *A*, quimobine, in a dose of 60 mg of bismuth, *B*, bismo-cymol, 75 mg of bismuth, *C*, bismo-cymol, 100 mg of bismuth, and *E*, biliposol, 80 mg of bismuth. The excretion is materially higher than that for the

watery solutions, as shown in chart 3, owing partly to the higher dose. There is less sag between the injections, the peak generally rises parabolically to the last injection and then drops acutely as with the watery solutions. The curves differ from those for the oil suspensions in the more rapid rise and fall. The peak for the lowest oil solution, quiniobine (shown in *A*), is similar to that for the oil suspension of sodium bismuth tartrate in a dose of 48 mg of bismuth (shown in chart 3, *E*). The curve for bismo-cymol, in a dose of 75 mg of bismuth (shown in *B*), is similar in height and contour, and with a dose of 100 mg of bismuth (shown in *C*) the excretion is but little more than that produced by the dose of 75 mg of bismuth and much less than that produced by biliposol, in a dose of 80 mg of bismuth (shown in *E*), which gives definitely the highest excretion. Bismo-cymol, therefore, is the least efficient. *D* shows the curve for a patient who received bismo-cymol equivalent to 950 mg of bismuth in eleven weeks, the study being started ten days after the last injection because of toxic symptoms. It illustrates the asymptotic decline, projected as a dotted line, traces being excreted beyond a month.

Chart 5 illustrates the "multiple" injections, generally three a week for three weeks. With this frequency there is little sag between injections even with the watery solutions (*A*, *B* and *C*), and the rise proceeds parabolically to the last injection. The descent occurs promptly in the usual parabolic form. The excretion level is very much higher than with the weekly injections (chart 3, *A*, *B* and *C*) and is close to that produced by biliposol injected two or three times a week (*D*). The latter curve resembles that for the multiple injections of watery solutions closely in form as well as in height, it shows relatively little increase over that for single weekly injections (chart 4, *E*). The two curves for the citrate in ethylene glycol (*B*) are higher than those for the water citrate (*A*), but this difference is probably accidental, for it does not exist for the weekly or single injections.

CONCLUSIONS BASED ON STUDY OF EXCRETION OF BISMUTH FOR INDIVIDUAL PATIENTS

1 The resemblance between the different bismuth compounds is more striking than the differences, except for bismuth subsalicylate.

2 The rapidity of absorption, as reflected in the height, ascent and descent of the excretion curves, for these compounds is in the following descending order:

Watery solutions (sodium bismuth citrate in water or in ethylene glycol > sodium bismuth tartrate in water) >

Oil solutions (biliposol > quiniobine > bismo-cymol) >

Oil suspensions (potassium sodium bismuth tartrate > bismuth salicylate)

3 The peak of excretion increases in height with the number of injections, generally in a parabolic curve

4 The peak increases with the dose, also parabolically, for instance, for sodium bismuth tartrate in oil the peak is twice as high with a dose of 48 mg of bismuth as with 32 mg of bismuth, but practically no more with 64 mg of bismuth than with 48 mg of bismuth. For bismo-cymol the peak is distinctly higher with 100 mg than with 75 mg of bismuth.

MEDIAN EXCRETION

To facilitate quantitative comparisons, the data for all patients with a given preparation, dosage and frequency of administration were reduced to medians which may be taken to represent type data. These

TABLE 1—Median Urinary Excretion of Bismuth (Milligrams per Week) During Last Week of Administration

Column	Preparation	Dose of Bismuth, Mg per Injection	Weekly Excretion of Bismuth, Mg		
			Single Injection 1st Week	Weekly Injection 3d Week	Multiple Injection 3d Week
1	2	3	4	5	
Watery solutions	32	4.52	5.7	36.5	
Sodium potassium bismuth tartrate in oil	32	2.54	9.88		
Sodium potassium bismuth tartrate in oil	48	4.3	19.1		
Sodium potassium bismuth tartrate in oil	64	5.56	18.47		
Bismuth salicylate	75	1.61	4.5		
Bismo cymol	75	4.78	17.8		
Bismo cymol	100	4.56	22.7		
Quinobine	60	7.5	17.15		
Biliposol	80	11.83	25.92	37.3	

are presented in line graphs. Chart 6 shows the total weekly excretion in successive weeks. The results for the watery solutions have been combined into a common median, since the variations between different preparations are less than those between different patients receiving the same preparation.

Single Injections—These results are shown in the upper tier of chart 6, and numerically for the first week in column 3 of table 1. The highest weekly excretion median, that for biliposol (10.5 mg of bismuth), is 7 times the lowest, that for the oil suspension of bismuth subsalicylate (1.6 mg of bismuth). The next highest is that for another oil solution, quinobine, (7.5 mg of bismuth), and the next lowest is that for another oil suspension, sodium bismuth tartrate in a dose of 32 mg of bismuth (2.5 mg of bismuth). Doubling the dosage of the suspension of the tartrate doubles the excretion (5.6 mg of bismuth). The excretion produced by the watery solutions (4.5 mg of bismuth) is nearly 80 per cent higher than that produced by the oil-suspended tartrate. Bismo-cymol, in doses of 75 and 100 mg of bismuth, causes an excretion of 4.8 and 4.6 mg of bismuth, which is little

more than that for watery solutions in much smaller dosage The results confirm that oil suspensions are absorbed less readily than watery solutions, that the relatively insoluble subsalicylate is absorbed more slowly; that the amount of oil-suspended tartrate absorbed increases with the dose, that the absorption of oil solutions differs for the individual drugs

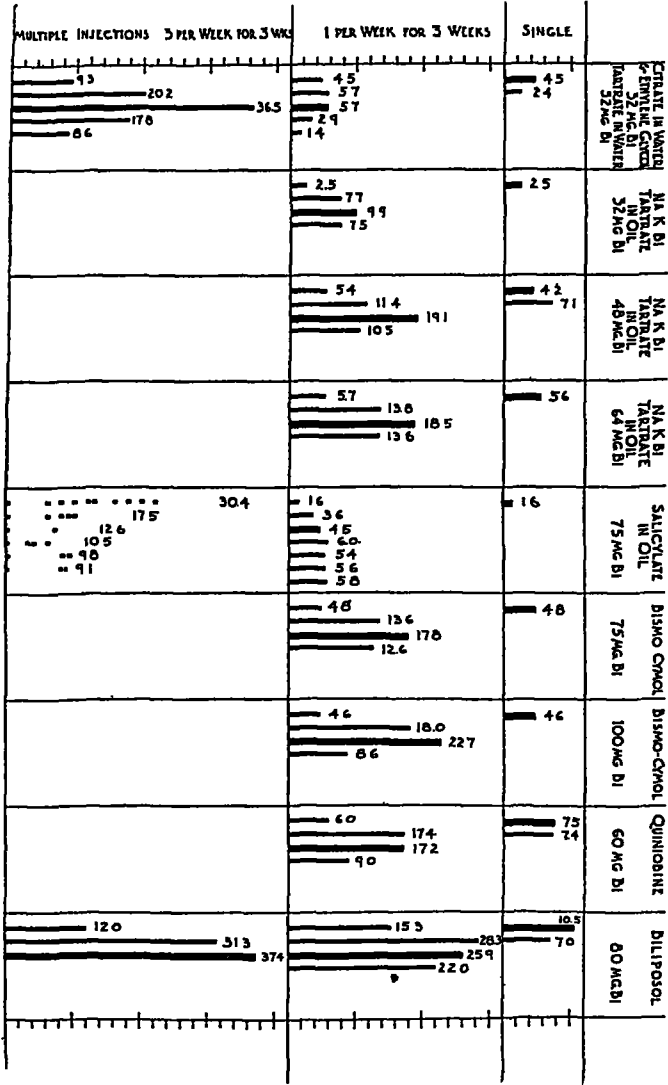


Chart 6—Median weekly urinary excretion of bismuth This corresponds to the length of lines which are drawn to scale and also is shown as milligrams in the number above each line The successive lines under each preparation represent successive weeks The heavier line shows the last week of treatment, i e, the week of the single injections and the third week of the weekly and multiple injections

and is not proportional to their bismuth content, and that biliposol and quiniobine in the clinical dosage secure the largest amount of absorption

If the second week is considered, it may be seen that the excretion has declined for the watery and oily solutions, but that with the oil-suspended tartrate the excretion is higher. This confirms the roentgen findings that the absorption of the suspension is incomplete in the first week and continues unabated in the second week.

Weekly Injections—These results are shown in the second tier of chart 6. The heavier line in the third week marks the end of the injections and the beginning of the after-period. The excretion level increases parabolically with the successive injections. In the third or last week of

TABLE 2—Median Increment and Decrement Quotients of Weekly Urinary Excretion

Column	1	2	Weekly Injections				Multiple Injections			
			3	4	5	6	7	8	9	10
			2d	3d	3d	4th	2d	3d	3d	4th
			Week	Week	Week	Week	Week	Week	Week	Week
Preparation	Dose of Bismuth, Mg	Divided	Divided	Divided	Divided	Divided	Divided	Divided	Divided	
		by	by	by	by	by	by	by	by	
		1st	2d	1st	3d	1st	2d	1st	3d	
		Week	Week	Week	Week	Week	Week	Week	Week	
Watery solutions	32	1.8	1.0	1.2	0.51	2.1	1.8	2.8	0.48	
Tartrate in oil	32	3.0	1.2	3.8	0.76					
Tartrate in oil	48	2.1	1.6	3.1	0.5					
Tartrate in oil	64	2.5	1.3	3.3	0.71					
Salicylate	75	2.2	1.3	2.7	1.3					
Bismo cymol	75	2.9	1.3	3.7	0.71					
Bismo cymol	100	3.9	1.2	4.9	0.38					
Quiniobine	60	2.9	0.98	2.8	0.53					
Biliposol	80	1.85	0.92	1.6	0.86	2.7	1.8	3.0	0.78	

the administration it reaches the median amount shown in column 4 of table 1. These values represent considerable increases over the amounts for the first week, shown in column 3. The ascent of the excretion curves during the administration and their descent in the after-period may be expressed and compared quantitatively by the increment and decrement quotients, the total excretion for each week being divided by that for a preceding week, as in table 2. Column 5 in table 2 shows that the amount in the third week is from 1.2 times that of the first week for the watery solutions to 4.9 times that for bismo-cymol (dose, 100 mg of bismuth). The quotient is above 3 for more than half of the preparations. The significance of this will be realized when it is remembered that 3 would be the maximal quotient if the first and second injections were still being absorbed at the same rate in the third week as in the first week, while it has been seen from single injections and will be seen again from the decrement quotients that the excretion declines rapidly in the week following the injection. Some other factor must be at work, presumably an increased excretion capacity of the kid-

neys, and perhaps partly a diuretic action of bismuth. Diuresis, however, is not the chief factor, for the increase of bismuth occurs when the volume of urine is not increased, and the rise in the excretion of bismuth is much greater than that in the volume of urine. That continued absorption of the earlier injections plays a definite, if subsidiary, part is indicated by the fact that all the oil suspensions (which are relatively slowly absorbed) show an excretion of from 2.7 to 3.8 times as much bismuth in the third week as in the first, while the most rapidly absorbed preparations show the lowest increment quotients, namely, 1.2 for watery solutions and 1.6 for biliposol. Chart 6 shows that the increase of excretion is almost always steeper in the second week than in the third, so that the curve is parabolic. This is probably due to some decline in the absorption from the first depot, beginning impairment of excretion capacity seems less probable. The decrease of excretion in the after-period was usually studied for only one week, the fourth. Column 6 in table 2 shows considerable differences in the decrement from the third to the fourth week. The salicylate gives a quotient (1.3) in harmony with its slow absorption. The decrease for the other preparations ranges from 0.86 mg of bismuth (a drop of one-sixth) to 0.38 mg of bismuth (a fall of nearly two-thirds). The median fall for all the preparations is about one-third, so that the rate of decline is fairly rapid. The sequence of the preparations in this respect appears irregular, presumably because it involves several factors which vary independently: the continuance of absorption, the level of excretion from which the fall starts, changes in excretion capacity, the mobilization of stored bismuth and probably other factors. In general, the curves for the suspensions fall more slowly than those for the solutions, the median quotient for the two groups being 0.73 and 0.51 respectively. This would be explained by the slower and more prolonged absorption of the suspensions.

The later course of the more prolonged therapeutic injections of the salicylate is shown in the broken line graph in the lower tier of chart 6. The median excretion attains the high level of 30 mg of bismuth at the end of the injections, as much as that for any of the other preparations at the end of three weekly injections. The unique feature of the curve for the salicylate is the indefinite continuance of surprisingly high excretion levels long after the injections have been stopped, after six weeks and six months the median weekly urinary excretion is still from 9 to 10 mg of bismuth, as high as in the third week of weekly injections of watery solutions or of tartrate suspensions in doses of 32 mg of bismuth.

Multiple Injections—The effects of multiple injections of watery solutions, three a week for three weeks, and of biliposol, two or three a week for three weeks, are shown in the lower tier of

chart 6 Suspensions were not included as they are not administered oftener than once a week in practice The chart shows that the excretion level rises as usual with successive injections The median excretion level for the watery solutions in the third and last week of the injections is 36.5 mg of bismuth, over 6 times that for the weekly injections (table 1), although the amount injected was but 3 times as great This is also reflected in the high increment quotients (table 2, columns 7 to 10) It is a further extension of the phenomenon noted in the comparison of the effects of weekly with those of single injections, which was attributed tentatively to increased renal permeability The decrement quotient after the injections are discontinued is essentially the same as for the weekly injections, so that it is evidently not greatly influenced by the level of excretion This is borne out by the data for other preparations With multiple injections of biliposol the increase in excretion above that for the weekly injections is not nearly as marked as with the watery solutions, the median for the third week is but a half more than with the weekly injections, or 3 times that for the single injections The total for the last week of the multiple injections of biliposol is practically the same as that for the multiple injections of watery solutions, although the difference is from $2\frac{1}{2}$ to 4 times that for single and weekly injections There seems to be a limiting factor at work, either in the absorption or in the excretion The decrement quotient is practically the same as for the weekly injections

PEAK OF EXCRETION MAXIMAL INTENSITY OF THE URINARY OUTPUT OF BISMUTH

The peak of excretion reflects the maximal concentration in the blood, which is one of the important factors in the toxic and in the therapeutic action To obviate accidental variations, the peak was taken as the mean of the three highest consecutive daily values The median height for all the patients receiving each preparation is shown graphically and numerically in column 2 of chart 7 The number at the end of each line graph shows the peak of daily urinary excretion of bismuth in milligrams

With single injections, illustrated in the first tier of chart 7, the peak increases from about 0.9 mg of bismuth for the watery solutions to about 1.6 mg for the tartiate in oil It should be remembered that the dosage of bismuth also increases from 32 to 48 mg The excretion with the oily solutions is intermediate, namely 1.3 mg of bismuth for quiniobine and 1.5 mg for biliposol, although the dosage of bismuth was higher (60 and 80 mg)

With weekly injections the medians of the peaks of daily urinary excretion ranged between 1.2 and 5.7 mg of bismuth, rising to from $1\frac{1}{2}$ to $3\frac{1}{2}$ times those for the single injections, similar to the increases in the weekly excretion The lowest peak is that for the suspension of

the salicylate (12 mg of bismuth), then come the watery solutions and the oil suspension of the tartrate with a dosage of 32 mg of bismuth and excretion peaks of from 12 to 22 mg of bismuth. Quiniodine is also within this range, with an excretion peak of 21 mg of bismuth. Bismo-cymol, in a dosage of 75 mg of bismuth, shows a

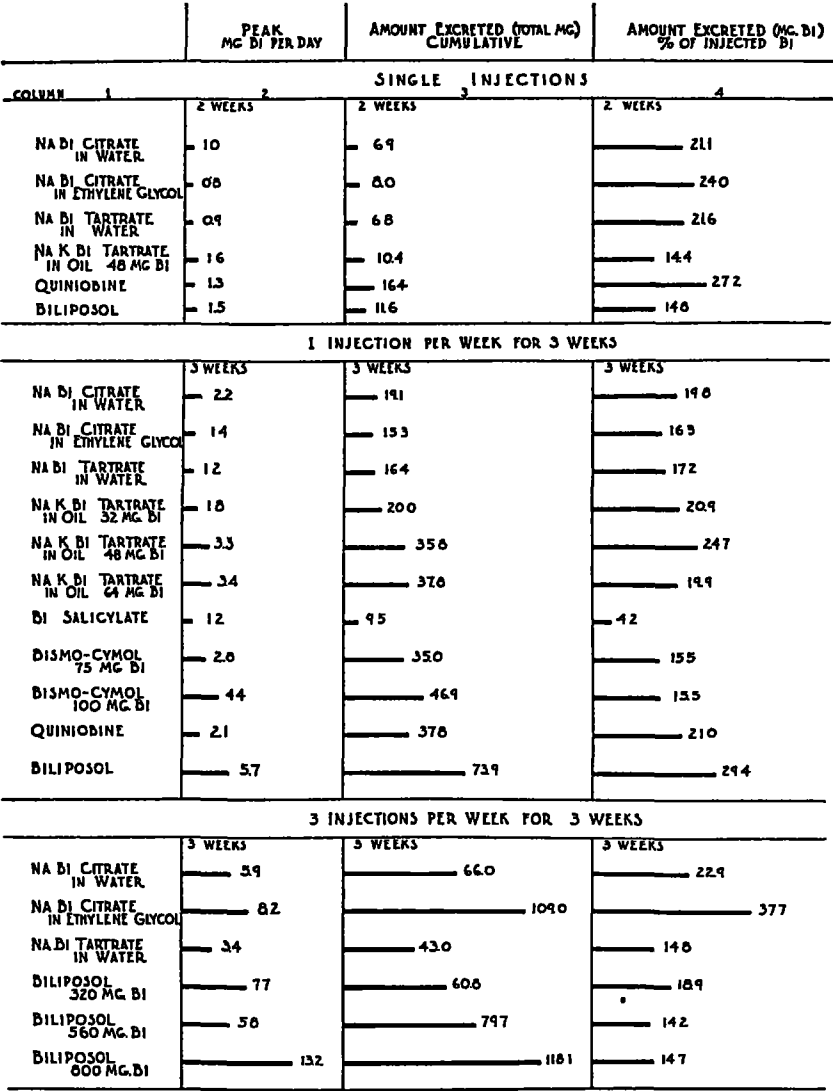


Chart 7—Median peak of excretion. Cumulative excretion and percentile excretion. The lines are drawn to scale in each column (but the scale varies for the different columns). The amounts are expressed in numbers at the end of each line.

little higher peak, 28 mg of bismuth, in a dosage of 100 mg, its peak is 44 mg. Doubling the dosage of the oil suspension of the tartrate also doubles its peak, 34 mg of bismuth. The highest peak, 57 mg of bismuth, is attained with biliposol.

Multiple injections raise the peak for the watery solutions to from 3.4 to 8.2 mg of bismuth, about 3 to 5 times the peak for the weekly injections, the peaks for biliposol are raised to from 5.8 to 13.2 mg of bismuth, not more than twice the weekly peaks, so that the increase is much less than for the watery solutions. The phenomenon was discussed in connection with the weekly excretion.

The dosage of bismuth is an important factor in determining the peak of excretion, as was stated in the grouping of the single and weekly injections. It was studied directly with three preparations. Weekly injections of sodium bismuth tartrate in oil, in doses of 32, 48 and 64 mg of bismuth, gave median peaks of 1.8, 3.3 and 3.4 mg of bismuth. Weekly injections of bismo-cymol, in doses of 75 and 100 mg. of bismuth, gave peaks of 2.8 and 4.4 mg of bismuth. Multiple injections of biliposol, with totals of 320, 560 and 800 mg of bismuth, gave peaks of 7.7, 5.8 and 13.2 mg of bismuth. There is a definite tendency for the peak to increase with the dose. With the weekly injections of the tartrate in oil it reaches its limit at a dose of 48 mg of bismuth, perhaps because the surface exposed to the solution does not increase as fast as the mass. With the weekly injections of bismo-cymol and the multiple injections of biliposol the peak rises until the administration of the highest dose, 100 mg of bismuth per week for bismo-cymol and the total of 800 mg of bismuth for biliposol.

Of the watery solutions, the citrate gives somewhat higher peaks than the tartrate in all three series, single, weekly and multiple injections, so that the difference is probably real although not important. With the citrate, the peak is higher for the watery solution than for the solution in ethylene glycol with single and weekly injections and lower with multiple injections, so the difference is probably accidental.

DURATION OF THE ASCENDING EXCRETION

The time required to reach the maximal excretion is shorter the more rapid the absorption, so it should be an index of the rate of absorption. Table 3 shows this as the interval between the first injection and the day when the highest urinary excretion was reached in the individual patients, making allowance for accidental variations. The simplest condition is that of single injections. Their medians are in the order of the watery solutions: citrate in water and in ethylene glycol, one day; tartrate in water, three days, biliposol, representing oil solutions, five days; tartrate in oil, representing oil suspensions, eleven days. This order agrees completely with the rapidity of absorption deduced from all lines of evidence. Quinobine gave irregular data, from five to fifteen days. The weekly injections are complicated by the cumulative excretion, but the medians follow the same order: watery solutions, thirteen days, oil solutions, fifteen days, oil suspension of the tartrate, eighteen days, and oil suspension of the salicylate, twenty days.

With multiple injections the ascent continues somewhat longer, namely, for nineteen days with the watery solutions and for eighteen days with biliposol

It may, therefore, be concluded that the duration is an index, inversely, of the rapidity of absorption, especially with single injections. With repeated injections it is complicated by the cumulative excretion but maintains the same sequence

TABLE 3—*Duration of Ascending Excretion* *

	Days to Peak	Median
Single Injections		
Citrate in water	1, 1, 1	1
Citrate in ethylene glycol	1, 2	1
Tartrate in water	2, 3, 3	3
Tartrate in oil 48 mg of bismuth per dose	11, 11, 12	11
Biliposol	4, 5, 9	5
Quiniobline	5, 10, 15	10
Weekly Injections		
Citrate in water	13, 15, 16, 16	15
Citrate in ethylene glycol	8, 8, 9	8
Tartrate in water	2, 17	
Median for all watery solutions		13
Tartrate in oil, 32 mg of bismuth	17, 18	
Tartrate in oil, 48 mg of bismuth	12, 14, 19	
Tartrate in oil, 64 mg of bismuth	18, 19	
Median for		
All tartrate in oil		18
Salicylate in oil	9, 20, 25	20
Bismo cymol, 75 mg of bismuth	16, 18, 21	18
Bismo cymol, 100 mg of bismuth	12, 15, 15	15
Quiniobline	14, 15, 24	15
Biliposol	7, 9, 17, 19	13
Median for all oil solutions		15
Multiple Injections		
Citrate in water	19, 19, 19	
Citrate in ethylene glycol	11, 18	
Tartrate in water	17, 20	
Median for all watery solutions		19
Biliposol	9, 18, 19	18

* The interval between the first injection and the day when the highest level of urinary excretion was reached

TOTAL OR CUMULATIVE URINARY EXCRETION

The excretion of small quantities of bismuth continues for periods much longer than it is feasible to keep patients under quantitative observation, nor would it have much practical value to do this, for it is safe to assume that these small amounts of bismuth do not produce therapeutic effects. It appeared preferable to confine the tabulation of the totals to the more active period of excretion, including the first two weeks for the single injections and three weeks for the weekly and multiple injections. The different methods of administration cover dif-

ferent after-periods and should therefore not be expressed in multiples of each other. However, the different preparations may be compared quantitatively for each of the methods. The median total, or, more properly, the cumulative excretion, is shown in chart 7 as milligrams in column 3 and as a percentage of the amount injected in column 4.

After single injections of all of the watery solutions, with a dosage of 32 mg of bismuth, the cumulative excretion in two weeks amounts to from 6.8 to 8 mg of bismuth, for the oil suspension of the tartrate, in a dose of 48 mg of bismuth, it is 10.4 mg of bismuth, for the solution of biliposol it is 11.6 mg of bismuth, and for quiniobine it is 16.4 mg of bismuth. The excretion of bismuth is, therefore, for the oil solutions about twice, and for the oil suspension, $1\frac{1}{3}$ times, that for the watery solutions, however, there is also a difference in dosage, and when this is taken into account the order of the preparations is altered materially. According to the percentage of the injected doses excreted (column 4 of chart 7), the tartrate oil suspension ranks lowest, with 14.4 per cent, followed closely by biliposol, with 14.8 per cent. The excretion for the watery solutions, with percentages of from 21.1 to 24, is about $1\frac{1}{2}$ times higher. Quiniobine ranks the highest, with 27.2 per cent.

With weekly injections, the cumulative excretion in three weeks is lowest for the salicylate, 9.5 mg of bismuth, but it should be remembered that the excretion level of this compound continues to ascend beyond three weeks. Next come the watery solutions, with an excretion of from 15 to 19 mg of bismuth. The oil suspension of the tartrate, in a dose of 32 mg of bismuth, gives practically the same excretion, 20.9 mg, but with doses of 48 and 64 mg the excretion is twice as high, 36 and 38 mg. Of the oil solutions the excretion for quiniobine, 38 mg, and that for bismo-cymol, 35 and 47 mg, are about 3 times as high as that for the watery solutions, and the excretion for biliposol, 74 mg, is 4 or 5 times that for the watery solutions. Expressed as the percentage of the amount injected, the salicylate gives by far the lowest excretion, 4.2 per cent. The watery solutions and the oil suspensions of the tartrate in doses of 32 and 64 mg show practically the same values, from 17 to 21 per cent, the oil suspension of the tartrate in a dose of 48 mg gives a somewhat higher excretion, 25 per cent. Of the oil solutions, the excretion for bismo-cymol (16 per cent) and that for quiniobine (21 per cent) are also practically the same as those for the watery solutions, but the excretion for biliposol (30 per cent) is nearly twice as high. Oil solutions as a class are, therefore, not absorbed better than watery solutions, but biliposol is superior in this respect.

With multiple injections, the excretion of the watery solutions is more variable, the medians ranging from 43 to 109 mg. This is from $2\frac{1}{2}$ to 7 times the excretion with weekly injections, although the dose is but 3 times as great. The quantity equals or somewhat surpasses that for weekly injections of oil solutions. The cumulative excretion with multiple injections of biliposol is from 61 to 118 mg, which differs less from the excretion for watery solutions than does the excretion of biliposol with weekly injections. The percentile excretion with multiple injections of watery solutions, from 14.8 to 38, is generally higher than with the weekly injections, while that for biliposol, from 14 to 19, is but half of the weekly percentage. The explanation is obscure.

The effect of varying the dosage of a given preparation was studied for the following medians

	Bismuth per dose (Mg)	Amount Excreted (Mg)	Per Cent Excreted
Tartrate in Oil (Weekly)	32	20.1	20.9
	48	35.8	24.7
	64	37.8	19.9
Bismo-Cymol (Weekly)	75	35.0	15.5
	100	47.0	15.5
	Total Dose	Amount Excreted	Per Cent Excreted
Biliposol (Multiple)	320	60.8	18.9
	560	79.7	14.2
	800	118.2	14.7

The changes of percentile excretion with the dosage are so inconstant and small that they are probably accidental, within the limits studied. Therefore, these variations of dosage do not materially affect the percentile excretion.

The two watery solutions gave the following median excretion, with equal doses

	Per Cent of Excretion	
	Citrate	Tartrate
Single injections	21	22
Weekly injections	20	17
Multiple injections	23	15

The excretion for the tartrate is somewhat lower than that for the citrate, but the difference is not important.

The effects of the solvents, water and ethylene glycol, were compared for the citrate, as follows

	Per Cent of Excretion	
	Citrate In Water	Citrate In Ethylene Glycol
Single injections	21	24
Weekly injections	20	16
Multiple injections	23	38

The difference is variable and therefore probably accidental

The effects of watery solution and oil suspension were compared for weekly injections of the tartrate, in a dose of 32 mg. of bismuth. The difference in the excretion, 17 and 21 per cent, respectively, is not significant

If one compares these observations on the cumulative excretion with those on the peak of excretion, the values will be seen to run fairly parallel and to lead to the same conclusions. Both are influenced chiefly by the dosage of bismuth, so that the percentile excretion of bismuth is confined within narrow limits for most preparations, namely, from one seventh to one fourth of the injected bismuth within two weeks after single injections, or within three weeks after from three to nine injections given in three weeks. The values for the salicylate are much lower, namely, one twenty-fifth, but this preparation is unique also in its long-continued excretion

CLINICAL SIGNIFICANCE

The usefulness of a bismuth preparation involves the concentration of active bismuth attained in the tissues, especially in the blood, and the height, course, rise, duration and decline of this concentration. The present study clarifies these facts materially on the reasonable assumption that the urinary excretion of bismuth reflects the concentration of active bismuth in the blood. Clinical usefulness also involves other factors, such as pain of administration, convenience and cost, which are not involved in this inquiry.

The data confirm that the various bismuth preparations differ materially as to speed of absorption and furnish quantitative indexes of these differences. The preparations have a definite sequence in respect to rapidity of absorption: watery solutions > oil solutions > oil suspension of the tartrate > oil suspension of the salicylate. According to the duration of the excretion, and therefore of the concentration and action, the sequence runs in inverse order. The height of the concentration and the total amount of bismuth excreted, which together represent the intensity of the action, are fairly parallel and depend more on the dosage and the frequency of the injection than on any other factor; the salicylate, however, occupies a special position.

The various preparations have the following characteristics which would influence their clinical usefulness

Watery Solutions of the Citrate and Tartrate and Solution of the Citrate in Ethylene Glycol—The prompt absorption would make these preparations suitable for the rapid production of the effects of bismuth, although the oily solutions are practically as good in this respect. The more prompt absorption of the watery solutions, however, tends to remove them from the site of injection and thus to exhaust absorption depots, the concentration of bismuth is, therefore, not maintained with weekly administration, but rises and falls sharply with each injection. This periodicity can be obviated by giving injections three times a week. This secures smooth and high excretion curves, equal to those obtained with the oily solutions, but such multiple injections are inconvenient, especially since the injection of watery solutions is generally more or less painful. The chief value of the watery solutions would, therefore, be to speed the effects of bismuth. They are used before the more slowly absorbed oil suspensions of bismuth. The solution in ethylene glycol does not seem to offer any advantage over the watery solutions.

Oily Solutions—These are essentially similar to the watery solutions in their absorption, but they differ practically because they are injected in higher doses, so that weekly injections suffice to produce relatively high and relatively lasting absorption, and the concentration curve is fairly smooth. It is, therefore, not necessary and indeed seems undesirable to inject them oftener than weekly. This is a material advantage, added to the fact that they often produce less local irritation than the watery solutions. However, the various oil solutions differ considerably. Biliposol is absorbed distinctly better than quiniobine, which offers little, if any, advantage over watery solutions. Bismo-cymol gives the poorest absorption of the oil solutions and is also the most irritant. Biliposol has what one would judge to be the most favorable absorption curve of any preparation tried and would seem to be a suitable form for routine use. However, it is doubtful whether in practice it is superior to the oil suspension of the tartrate in a dose of 48 mg of bismuth.

Oil Suspension of Tartrate—With this preparation, the concentration of bismuth rises promptly although more slowly than with either watery or oily solutions. Weekly injections give a satisfactory continuity of concentration. Multiple injections may be dangerous.

Oil Suspension of Bismuth Subsalcylate—This preparation is an example of a water-insoluble basic bismuth salt. It differs markedly from the other preparations in that it is much more slowly absorbed and the effect is more lasting. There is a long delay before the effect of the bismuth is obtained, so that it is not advisable to start bismuth treat-

ment with this preparation unless its administration is begun well in advance, during arsphenamine therapy. The long-continued absorption is advantageous if the patient interrupts treatment, but it may also lead to uncontrollable cumulation and consequent toxic effects. The small quantities of bismuth which are excreted over six months are perhaps more likely to injure the kidneys than is *Spirochaeta pallida*. All this throws doubt on the desirability of this preparation, at least for routine use. Briefly, then, the excretion curves indicate that the watery or oil solutions secure the most prompt effects, and that one oil solution and the oil suspension of the tartrate have advantages for routine use. The salicylate appears undesirable since its absorption is both too slow and too persistent.

SUMMARY

1 The urinary excretion of clinical doses of the following bismuth preparations was studied: watery solutions of sodium bismuth citrate and sodium bismuth tartrate, and a solution of the citrate in ethylene glycol, oily solutions (biliposol, quiniobine and bismo-cymol), oil suspensions (the water-soluble sodium potassium bismuth tartrate and the water-insoluble bismuth subsalicylate).

2 The resemblances in the excretion and therefore in the absorption and action of these preparations appear more impressive than the differences, except for the salicylate. This stands apart, with a much slower and much more persistent absorption and excretion.

3 Both the ascent and the descent of the excretion curve are parabolic, i. e., more rapid at first, then showing gradual and progressive slowing. The second injection raises the excretion often to more than double that for the first, succeeding injections give less rise, again in parabolic progression. The excretion sags more or less between weekly injections, in proportion to the rapidity of absorption. This is most marked with watery solutions, less marked with oil solutions, insignificant with the tartrate oil suspensions and absent with the salicylate. After discontinuing the injections, the abruptness of the descent depends chiefly on the continuance of absorption and is probably independent of the level of excretion of bismuth.

4 The velocity of excretion and absorption is in the following order: watery solutions > oil solutions > oil suspension of the tartrate > oil suspension of the salicylate. Among watery solutions the citrate is absorbed somewhat better than the tartrate. The citrate is absorbed equally well from the watery solution and from solution in ethylene glycol. For the oil solutions the absorption is in the following order: biliposol > quiniobine > bismo-cymol.

that vitiligo is never due to syphilis, it should dispel any lingering remnants of the once popular myth that vitiligo is a tell-tale sign of a previous syphilitic infection

EFFECTS OF ARSENICAL DERMATITIS ON PIGMENTATION,
ARSPHENAMINES VS OTHER COMPOUNDS OF
ARSENIC HISTOLOGY

Depigmentation following arspenamine therapy was in every instance preceded by a generalized exfoliative dermatitis. This arspenamine dermatitis is considered by Boutelier and some others to be merely another example of the inflammatory skin lesion which may be succeeded by pigmentary disturbances. The arsenic would here be responsible in either case, whether directly or indirectly. There is, of course, no question of scarring here, for the process is diffuse, and after healing, with desquamation, leaves the skin uniformly soft and smooth. To all appearances, only the pigment function remains impaired.

It might be expected that a study of the dermatitis lesions would furnish some clues to the disappearance of pigment. This does not seem to have been the case. Histologic examinations of the skin of patients with arspenamine dermatitis have been reported but rarely. By far the most complete picture of the process in evolution is given by Kyrle (reference 29 b), and will be taken up later in conjunction with our own cases. Kyrle, however, is practically silent on the question of pigment in this connection, while the few remaining reports available are more or less contradictory, besides being open to one objection or another. Thus Bergmann, reporting a fixed tuberculous exanthem following injections of arspenamine, described inflammatory changes in the cutis, but gave no data on the epidermis. As this patient had no desquamation, nor any generalized pigmentary disturbance, the case is not typical. Buschke and Freymann reported biopsies from two patients in whom a lichen ruber-like exanthem developed from neoarsphenamine, while Heller has reported the pathologic changes in a dermatitis following the administration of arspenamine and neoarsphenamine. In both the latter instances the patients had received mercury and a solution of potassium arsenite in addition to the arspenamines, thus the rôle of any one drug in producing the lesions was obscured. In Heller's case there was, furthermore, a generalized hyperkeratosis which clinically overshadowed the dermatitis at the time the biopsy was taken. Moser (reported by Jaffé) gives histologic findings in two cases of generalized exfoliative dermatitis from sulphoxylate arspenamine, both terminating fatally, but pigment is not mentioned.

So far as these reports are comparable, there seems to be little visible impairment of the lower epidermal (i e, pigment-forming) cells,

save in the Moser specimens. One finds, for example, "suggestions of a thinning of the prickle-cell layer" and "prickle-cell layer scarcely changed—at least not thinned" (Buschke and Freymann's cases), and "no essential changes in the rete" (Heller). Bergmann gives no data on epidermal changes seen in his biopsy. In general, slight broadening of the granular layer and abnormal cornification constitute the chief changes observed in the epidermis, and even these are totally lacking in uniformity. Thus, of the two Moser specimens, both taken from patients with terminal lesions from the same drug, one showed extensive cornification, in some places extending all the way to the basal layer, while in the other, the horny layer was greatly thinned and retained cells with nuclei (parakeratosis). In the second Moser specimen, the entire epidermis was thinned out in many places, especially over the papillae, but the rete pegs, on the contrary, were often greatly lengthened, and in parts, widened. The most striking change was a vascular degeneration. Three of the remaining cases showed a marked follicular keratosis, accompanied by hyperpigmentation (Buschke and Freymann, Heller). It is possibly significant that all three of these patients had received inorganic arsenic in addition to an arsphenamine.

In all the foregoing cases the cutis was reported as showing perivascular infiltration, especially in the subpapillary layers. In all but Heller's case (in which the keratosis was more marked than the dermatitis) this was described as intense, and in one (Buschke and Freymann) there were also extensive hemorrhagic areas in the subcutis. Most specimens showed cellular infiltrates around the sweat glands. Edema was not a constant finding, but in some sections, notably Moser's, was very marked, here the collagenous fibers were loose, swollen and spread apart, leaving hollow spaces. Abnormal deposits of pigment, where mentioned, were chiefly in the papillary layer.

There is no mention of any depigmentation following the dermatitis in any of the foregoing cases. Of the three in which melanoderma developed, Heller's (the only one in which pigment findings are described in any detail) showed the pigment to lie almost exclusively in the cutis. It was abundant in the papillary and reticular layers, and especially in the tips of the papillae, where it appeared to be piled up in extracellular heaps, although some was also present inside the cells.

Let us examine for a moment one of the few reports available on histologic changes in dermatitis with subsequent pigmentation from arsenic other than the arsphenamines. Brooke and Roberts, writing of the epidemic of arsenical beer poisoning in 1901, described the bulk of the skin changes as being confined to the epidermis. The cutis is reported as practically unaltered. There was some congestion of vessels, which were surrounded by a mantle of wandering cells but leukocytosis

—in the sense of collections of cells in particular areas—was “conspicuous for its absence” On the other hand, the stratum lucidum, the stratum granulosum and the rete were at first hypertrophied, later, they degenerated and became atrophied, coincidentally with a thickening of the horny layer The great preponderance of pigment here was found in the epidermis The basal cells undergoing degeneration were filled with amorphous pigment granules Some connective tissue cells close below the epidermis also contained pigment, but there was no general pigmentation of the cutis, not even of the upper layers

The latter report is illuminating for the picture of what may happen in normal persons Too often the condition for which arsenic was administered obscures the picture Gans, for example, found degenerative changes in both the epidermis and the cutis, in his study of a case of arsenical melanosis, but these findings are compromised by the persistence of lesions of dermatitis herpetiformis, for which the arsenic (“both injection and Fowler’s solution”) was originally administered

From the cases of dermatitis so far examined, one might be tempted to conclude that the arsphenamines attack primarily the cutis and its vascular structures, while the inorganic arsenicals do their principal damage in the epidermis Accumulations of pigment would also appear to localize themselves in the structures subject to greatest inflammatory or degenerative change, being found principally in the cutis in the cases of arsphenamine dermatitis and in the epidermis in the Brooke-Roberts’ cases of beer poisoning *

Osborne drew somewhat similar conclusions from his studies of arsenic as revealed in microscopic examinations of tissue sections from patients with arsenical pigmentation and keratosis (1925) and arsenical dermatitis (1928) In his specimens from cases of arsphenamine dermatitis, he found the bulk of the arsenic deposited deep in the corium around the arterioles and capillaries, in the walls and lumen of the sweat and sebaceous glands and their ducts, and in the hair follicles and shafts Sections of normal skin from patients receiving arsphenamines showed arsenic in the same locations but in relatively small amounts At no stage of the dermatitis could any but the most minute quantity of arsenic be found in the epidermis, including the horny layer The subpapillary layer was almost entirely free from arsenic, and although special search was made around the capillary loops in the papillae, only trifling amounts were seen there On the other hand, in melanosis and keratosis from solutions of potassium arsenite and of arsenous and mercuric iodide, U S P, the arsenic was reported to be localized chiefly in the epidermis, although plentiful also in the upper corium, and in the sebaceous glands

* Brooke and Roberts for reasons which they give, assume that the arsenic entered the system in the form of arsenates

and their ducts. The distribution of the arsenic, however, did not bear any apparent relation to the distribution of pigment. Arsenic was present whether pigment was present or not, and was separate and distinct from the pigment.

So far, we do not find the evidence sufficient for the distinction already suggested between the action of the arsphenamines and that of the other compounds of arsenic. In our own specimens, as will be seen presently, we found arsenic from both sources distributed indifferently throughout both epidermis and cutis, and pathologic changes in specimens from cases of arsphenamine dermatitis, far from being confined chiefly to the cutis, were, if anything, more pronounced in the epidermis. Clinically, all forms of eruptions—scarlatiniform, lichenoid, eczematoid—as well as hyperkeratosis and melanoderma have been reported due to arsenic from the most varied sources, including arsphenamine medication. Moreover, on a single patient, examined at different stages, one may observe all the gradations between a simple erythematous rash and a severe vesicular dermatitis with grave constitutional symptoms. The pathologist's view is perforce a snapshot, not a moving picture, and he will be limited, not only in time, but also in space, for of all the multitude of constantly changing skin manifestations seen by the clinician, comparatively few will come within range of his camera. Thus, if the changes so far reported in the cases of arsphenamine dermatitis appear to be mostly in the cutis, the clinical descriptions (where available) suggest at once that this is so, either because the dermatitis had not yet progressed beyond the early inflammatory stage or had receded until only vestiges of inflammation remained, or because the eruption took the form of a lichen planus, for example, rather than of a pityriasis or a vesicular eczema. Hence, while positive findings under the microscope are always worthy of consideration, negative ones, especially in view of the small number of reports available for comparison in the present instance, are not necessarily significant. With the many cases of melanosis combined with hyperkeratosis but without eruptive manifestations reported frequently in patients taking arsenic by mouth, we are not concerned here.

ARSENICAL DERMATITIS AND VITILIGO ARSENIC FINDINGS IN BLOOD, URINE AND SKIN

None of the foregoing reports has taken up the question of depigmentation, either in relation to inflammatory changes or to the presence of arsenic in the tissues. In our own cases, we were able to verify in the same patients, not only the disappearance of pigment from the epidermis immediately following an arsenical dermatitis but also the pres-

body and the normal processes of pigment formation. Many writers have attempted to explain arsenical melanosis by a speeding up of the natural rhythm of oxygen exchange by the arsenic deposited in the tissues, in the skin, this would hasten the oxidation of certain colorless premelanins to the finished melanin. Depigmentation would then result from premature exhaustion of the epidermal cells.

According to Bloch, the immediate precursor of melanin is probably di-hydroxyphenylalanin, which the basal cells of the epidermis, the

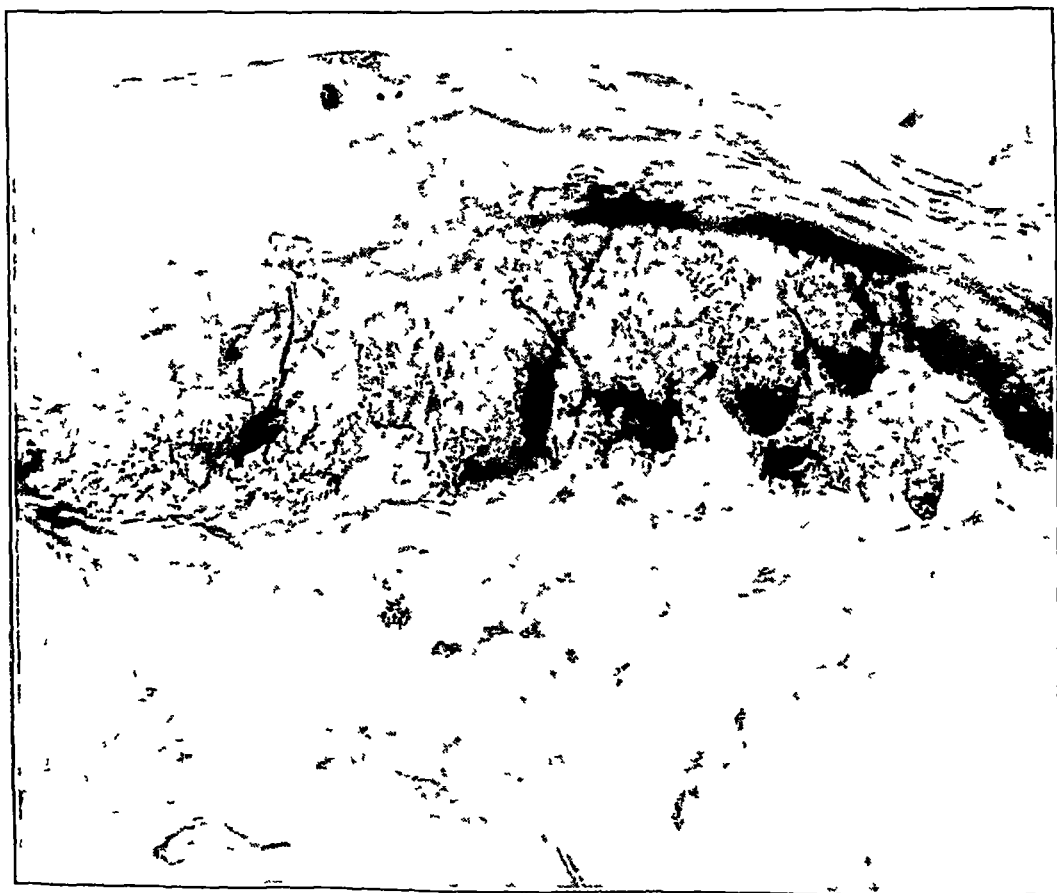


Fig 12 (case 7)—Same section as in figure 11, dopa reaction. Note the round cell melanoblasts at the right of the section, and melanoblasts with their numerous branching processes, $\times 600$.

melanoblasts, by virtue of a specific oxydase, di-hydroxyphenylalanin oxydase, convert into the finished pigment. The activity of arsenic has been conceived, even as early as 1879, by Binz and Schulz as a reduction, by the tissues, of pentavalent forms to trivalent ones, and an oxidation of trivalent forms to pentavalent ones. The therapeutic action of the asphenamines has been likewise attributed to their conversion into the higher oxides as or before they enter into combination with

the cellular proteins. Interplay of these factors forms the basis for most of the various attempts to explain pigmentary abnormalities following arsenic. Boutehier, for example, has suggested that in the breaking of the arsphenamine molecule, the setting free of the phenol group furnishes a melanogen more sensitive to oxydases than is normally produced.

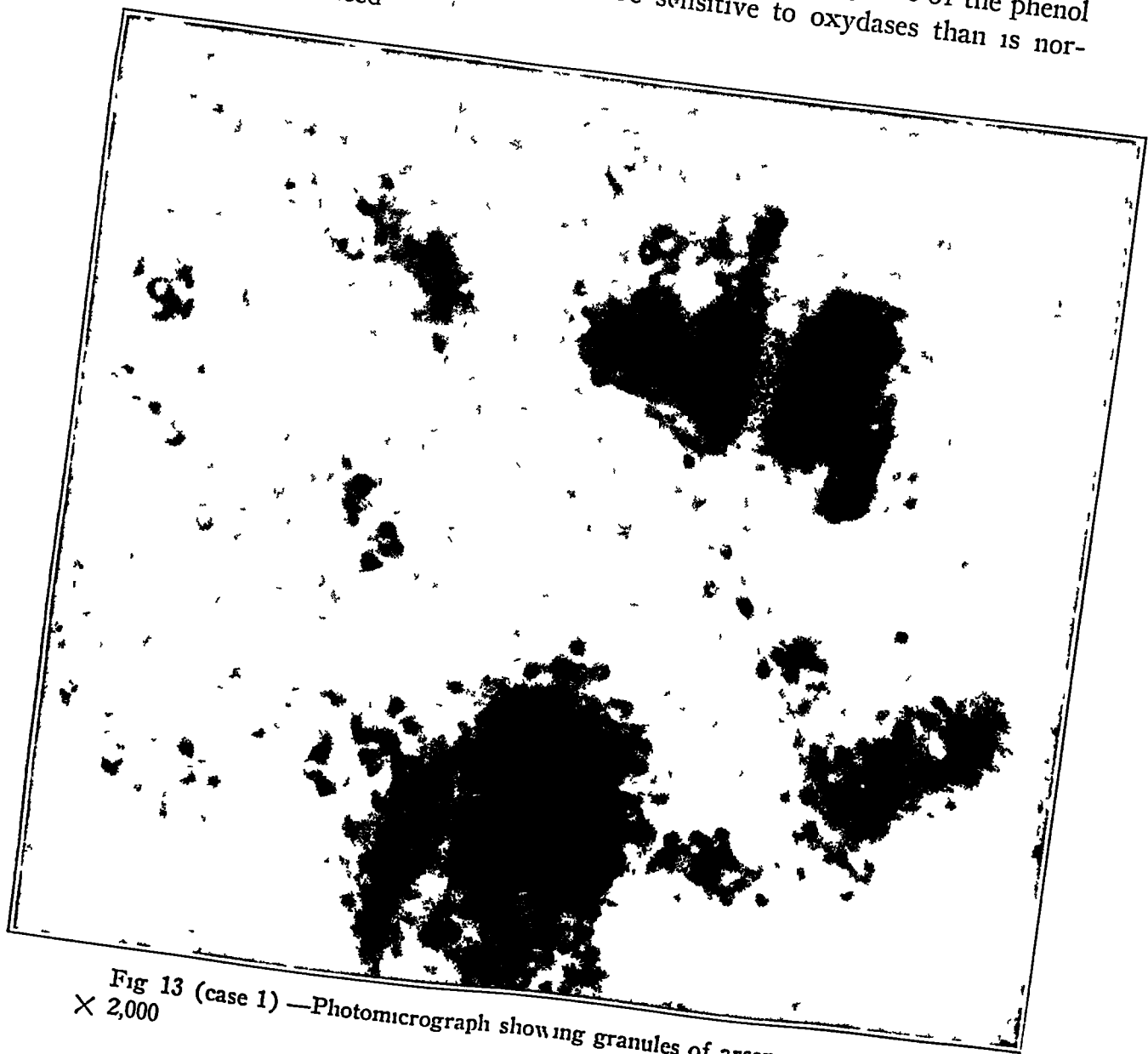


Fig 13 (case 1) —Photomicrograph showing granules of arsenic in the corium, $\times 2,000$

At all events, the epidermal cells evidently possess some property of reacting specifically to the arsphenamines. As long as this reaction is adequate for the metabolism of the arsphenamine molecule, an equilibrium is maintained between the stimulus and the response of the various cell functions. As soon as this equilibrium is disturbed, either by an excess of arsenic to metabolize or by some primary inadequacy of the cells themselves functional disturbances set in. The order of

events is differently conceived by different observers. Many think the arsphenamines attack primarily the vascular structures of the cutis, penetrating to the epidermis only when the latter is already injured by some other agent, as syphilitic toxins. According to Kyrle (reference 29 b), however, who made multiple thorough and painstaking histologic examinations of specimens from patients in various stages of arsphenamine

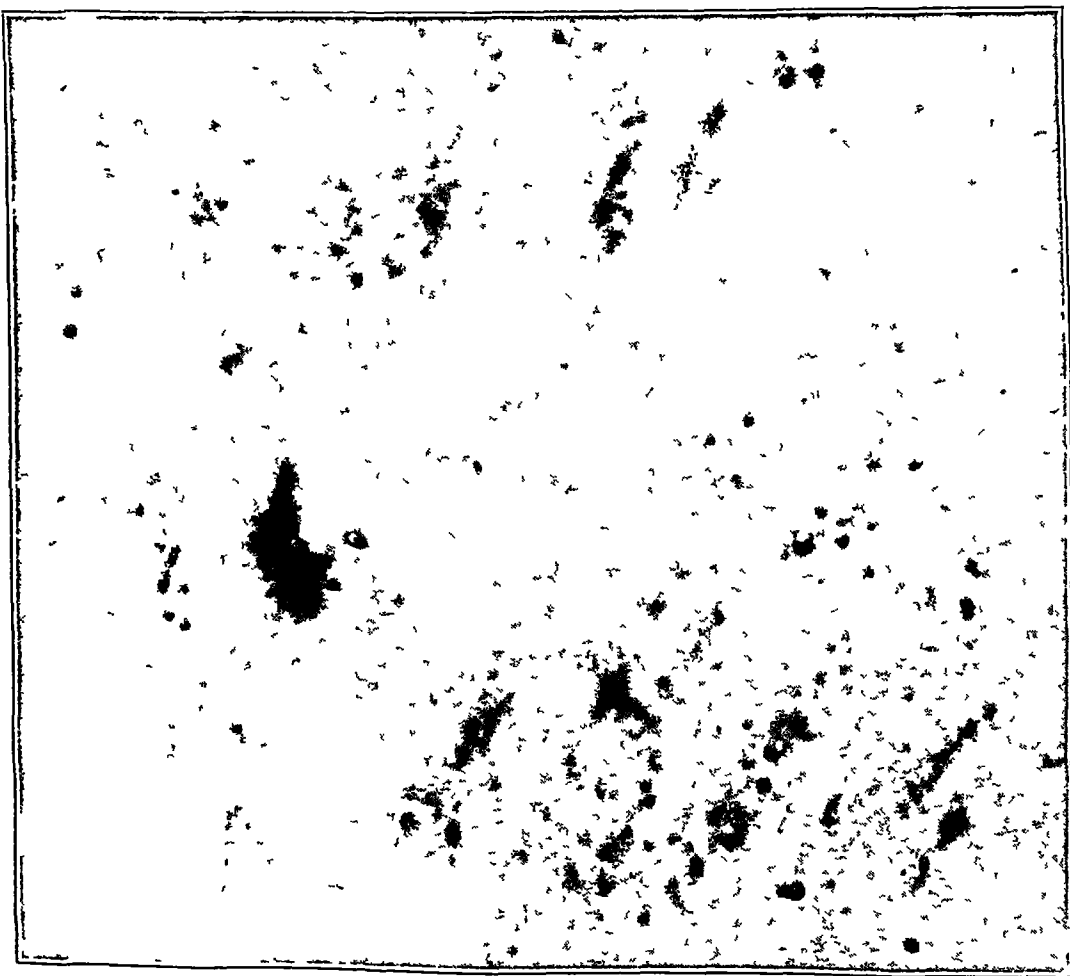


Fig 14 (case 10) —Photomicrograph showing granules of arsenic throughout the epidermis in vitiligo section

dermatitis, the primary point of attack is in the epidermis. The first functional disturbance of the epidermal cells causes an irritation of the sensory nerve fibers, producing a reflex stimulation of the vasomotor mechanism. It is the latter which furnishes the basis for inflammatory phenomena in the cutis. The cutis at first shows in the papillary and reticular layers only a dilatation of blood vessels and a scanty infiltration consisting chiefly of lymphocytes. Clinically, this is manifested by

an erythema. At this stage, no changes are as yet discernible in the epidermis, though it can scarcely be doubted that structural changes accompany functional ones—one merely does not perceive the initial steps, which are masked by later and more striking changes. This erythema, then, represents an effort to reestablish functional equilibrium by means of an active hyperemia and may be only transitory, in which case the symptoms recede and a true dermatitis does not develop. If the irritation is continued, however, more serious changes occur in the epi-

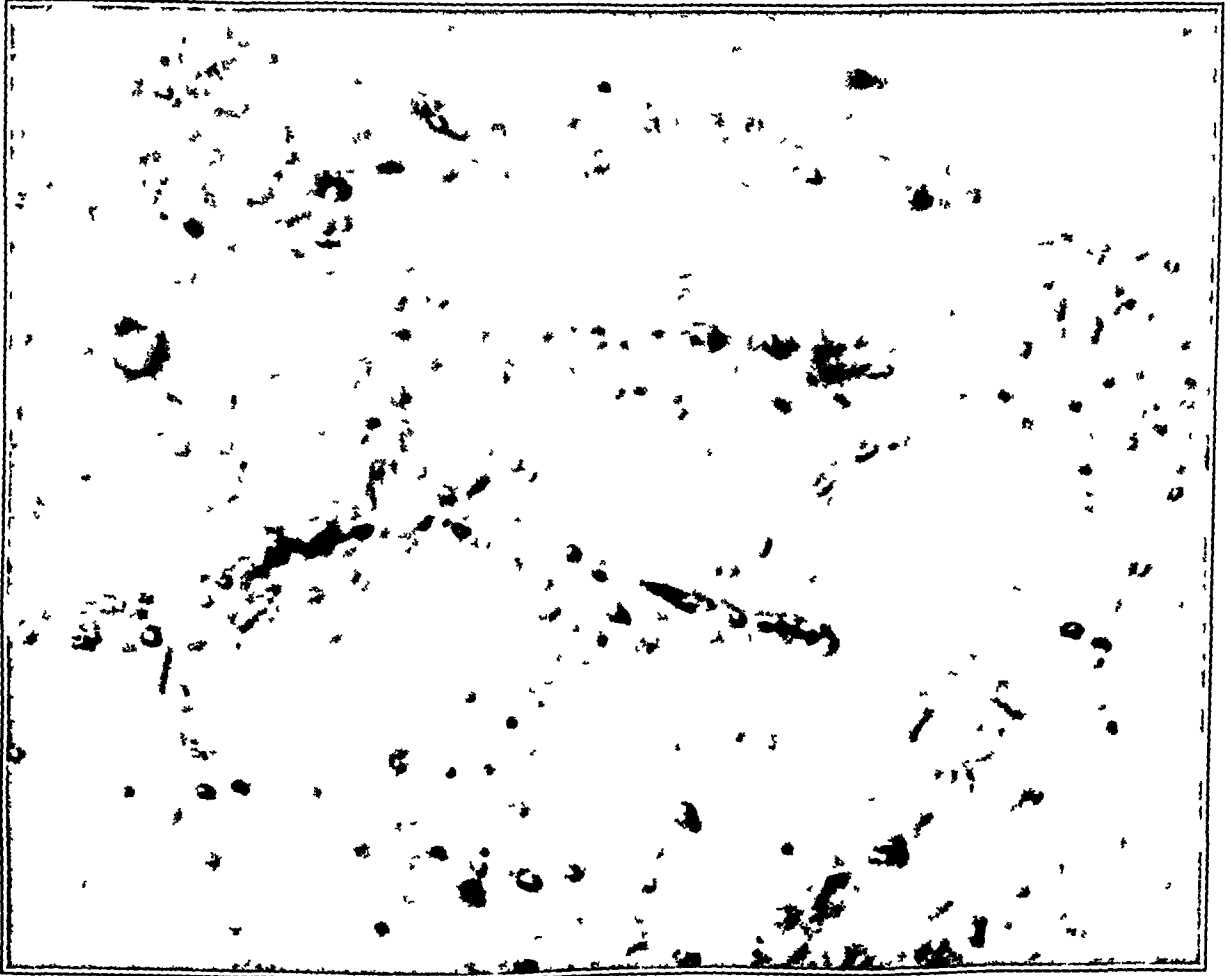


Fig 15 (case 4)—Photomicrograph showing enormous quantity of arsenic granules in the cutis. This patient showed 5.22 mg of metallic arsenic per hundred grams of dried specimen, $\times 1,200$

dermal cells, imperceptible at first, but leading gradually to a breaking down of the normal structure of both cytoplasm and nucleus, with colliquation and swelling, the cells assume a globular form, and by increasing pressure are pushed out of their palisade-like alignment, in short there is the appearance of the "status spongiosus" described by Unna. Here and there one finds at this stage indications of parakeratosis. The simultaneously increasing irritation of the vasomotor mechanism

leads eventually to passive hyperemia and stasis, with exudation of serum and further infiltration of cells into the cutis. These in turn accentuate the degenerative processes already begun in the epidermis, which now shows the characteristic "balloon cells" of Unna. Amitotic division of these results in the formation of multinuclear giant cells. Vesicle formation is secondary, the degeneration of malpighian cells here and there leaving clefts—the *loci minoris resistentiae*—into which pour more serous exudates from the cutis. Further invasion of round cells and leukocytes from the cutis and continued breakdown of epidermal cells lead to pustule formation. This stage is not infrequently complicated by secondary infection. Although our own cases of arspnenamine dermatitis did not show vesicle or pustule formation while under our observation, the evolution of the dermatitis, as visualized by Kyrle, is in harmony with our own findings, and provides in itself ample cause for a disruption of the normal processes of pigmentation.

Why do some persons have vitiligo after an arspnenamine dermatitis, while others do not? Why in some instances (witness our second group of cases) should arsenic, though present in surprising quantities in both skin and body fluids, be associated with few visible skin changes other than depigmentation? Similarly perplexing is the observation that the same dermatosis may leave in its wake a hyperpigmentation in one person and a hypopigmentation in another. Again, on the same person, a dermatosis may heal leaving certain sites hyperpigmented and others depigmented (Langer). The same dose of roentgen irradiation may produce tanning on one person and depigmentation on another (Wachtel). In several cases personally observed by one of us, an x-ray dose of from one eighth to one fourth unit, barely one eighth of that sufficient to cause a slight erythema on the average person, brought out within seventy-two hours a crop of black moles hitherto unsuspected by either physician or patient. Ultraviolet irradiation just adequate to stimulate repigmentation of vitiligo plaques, will, if increased ever so little beyond the optimum for a given person, result in a sudden disappearance of the newly formed pigment (Hashimoto). Among solar leukodermas, in Tommasi's paradoxical case, parts of the body exposed to the sun were uniformly depigmented, while parts protected by the bathing suit were slightly and uniformly hyperpigmented, giving a bathing-suit design exactly the reverse of that usually observed. Kyrle (reference 29 a) was convinced that a congenital inferiority of certain circumscribed skin areas was the deciding factor in many cases of vitiligo. Such areas may not be suspected until some combination of other factors makes unusual demands on the skin functions. Circumscribed areas deficient in normal pigment have been shown to exist in the skin of patients with psoriasis, on parts not yet invaded by the eruption (Van Kerckhoff). In these cases, there is evidently a deficiency in the keratinization function, as well as in melanogenesis. In

the cases of true vitiligo associated with retention of arsenic, however, only the pigment function appears (or remains) impaired. This does not mean that the disturbance is limited to the skin, nor that arsenic is necessarily the sole factor. As in a severe exfoliative dermatitis the entire system is involved, so it seems probable that a relative or potential deficiency of certain skin areas or functions constitutes only one of several weak links in the vital chain of the so-called "susceptible" person. A sluggish excretory mechanism may constitute another weak link. Arsenic may be only the exciting force, or, as we prefer to say, pending further proof, one exciting force.

It has been shown repeatedly that the size of the dose is of little significance compared to the factor of individual variation. Cases of melanosis have been reported as occurring after as little as 0.26 Gm of arsenic acid (Waelsch, cited by Stahl) and 0.3 Gm of the same drug (Muller, cited by Stahl). No parallelism could be detected in our own cases between the amount of arsphenamine received by a patient and the extent, nature or intensity of his or her pigmentary changes. In an effort to obtain further light on the problem of individual (or group?) susceptibility to arsenic, we carried out on our patients with vitiligo intradermal tests with arsphenamines in various dilutions. Since these tests form part of a more extensive series, to be reported separately, we shall confine ourselves here to a brief presentation of the facts. Findings for each case are summarized under the individual case reports.

We considered a reaction positive (+) when a papule or nodule from 3 to 15 mm in diameter formed on the site of the injection. The papule or nodule might appear within a few days after the injection, or not until one, two or three weeks later. It might begin as a pinhead-sized elevation and only gradually increase in size. In some instances an area of dermatitis developed around the nodule (+D). These positive reactions usually involuted slowly, sometimes persisting for several months. When a cyanotic or an infiltrated spot developed at the site of injection, we considered the reaction as doubtful (\pm), even when it persisted for several weeks or a month. These less pronounced reactions, however, usually subsided within one or two weeks. A transitory macule, which disappeared within the first few days, was considered negative. A solution of potassium arsenite and water, used intradermally as a control, never gave positive reactions. By referring to the tables in the various case reports, one may follow the patients' responses to the injections. It is interesting to note that the fourth patient (T. L.), who had the highest amount of arsenic in the skin (5.22 mg) and also high percentages in the blood and urine, gave a most pronounced reaction to the intradermal tests, showing a dermatitis around the sites of injection with both neoarsphenamine and old arsphenamine.

Numerous writers have sought to explain vitiligo as a consequence of injury or functional disturbance of the nervous system. Recently, Dohi and Korhonen have taken the view that loss of skin pigment might be brought about by injury to the sympathetic nervous system through the toxic action of arsphenamine. These writers base their arguments chiefly on (1) function tests of the sympathetic nervous system carried out on their respective patients with vitiligo (one each), following arsphenamine dermatitis, and (2) the well-known occurrence of the "angioneurotic complex" or nitritoid crisis and similar though milder reactions following immediately on the intravenous injection of arsphenamine.

The cause and mechanism of these immediate reactions are still much debated. If they have a common origin with the more delayed cutaneous reactions—dermatitis and pigmentary changes—we should expect to find, among patients giving immediate vasomotor reactions to the injection of an arsphenamine, a higher incidence of the skin manifestations, and conversely, in the histories of patients with dermatitis, melanoderma and vitiligo, we should expect some previous indications of neurocirculatory instability, in the form of nitritoid crises or one of the milder forms of vasomotor reaction to earlier injections of the drug. We have not observed any such concurrence, either in the cases under discussion here or in a series of cases of arsphenamine dermatitis studied previously from the standpoint of various complications (Cannon and Karelitz), and we are not aware that it has been reported in significant numbers by others. Kyrle considered the two reactions to be based on different processes. In his experience, patients with a tendency to the "angio-neurotic complex" were as a rule not subject to dermatitis, while those highly susceptible to dermatitis did not customarily react with angioneurotic complications, but would tolerate a number of injections without any apparent difficulty, before the onset of the dermatitis. The Salvarsan Committee of the British Medical Research Council, after its study of extensive series of cases from both groups of complications, concluded that exfoliative dermatitis and inflammation of internal organs as well were attributable to the arsenic per se, the findings corresponding to those in acute poisoning from inorganic arsenic, whereas, the "vasomotor" phenomena, including the nitritoid crisis, pointed to a disturbance of the colloidal condition of the blood not directly connected with the presence of arsenic in the arsphenamine molecule. Without presuming to have made a comprehensive review of this phase of the subject, we do not feel that evidence so far available warrants placing two such diverse phenomena on a common basis.

The functional tests of the vegetative nervous system carried out by Dohi and by Korhonen appear to have yielded but two responses indicative of any peculiarities in their patients: dermographism and

sweating Both writers obtained a more pronounced urticaria factitia alba on the depigmented areas than on the hyperpigmented ones (normal areas on Dohi's patient negative) After injection of pilocarpine, both found sweating absent or nearly so on the depigmented areas, though increased elsewhere Epinephrine also produced slight glycosuria in Dohi's patient (Korhonen's negative), though the more recent experiments tend to minimize the significance of minor amounts and variations of urinary sugar

In view of the scarcity of published reports on this phase of the subject, and the none too conclusive nature of those which have come to our attention, we thought it well to investigate in our own group of patients the possibility that arsenic retention might have led to loss of pigment by way of injury or functional derangement of the sympathetic nervous system At least, symptoms of any such disturbances occurring uniformly in a number of cases with the vitiligo-arsenic factors in common, might be considered significant Before carrying out our tests, we had three of the four patients examined in the endocrine department The condition in one (case 2) was diagnosed as possible hypothyroidism with goiter, the other two patients (cases 1 and 7) revealed nothing suggestive of endocrine disturbances Details of the nervous system tests and responses may be seen in table 2

Of the four patients tested, I T (case 2) was the only one whose reactions as a whole were indicative of any functional imbalance Here, the fall in blood pressure after epinephrine, together with the somewhat exaggerated response to pilocarpine (excessive salivation, vomiting and state of anxiety) might well be construed as symptoms of abnormal vagus tone The increase in pulse rate after the administration of pilocarpine is also somewhat higher than usual Lehmann (cited by Muller) found that persons with an increase of from fifteen to twenty beats after subcutaneous injection also showed other symptoms of hyperexcitability of the vagus The reactions of the remaining three patients to the pharmacodynamic tests were with few exceptions within the limits generally found in normal persons, and the divergences were too lacking in uniformity to enable any conclusions to be drawn, without a more careful inquiry into other factors The tests for dermographism, the Loewi phenomenon and the pilomotor reflex were uniformly negative in all four patients, and Aschner's phenomenon was within the limits observed in healthy subjects

The most interesting observation in our opinion, was the sweating response to pilocarpine Patients in cases 1 and 7 showed sweat droplets on normal parts but none on vitiliginous parts This is in conformity with the findings of Dohi Korhonen and other investigators In the second patient however sweat droplets appeared on both normal and vitiliginous parts but none on the shoeblack spots It is quite possible that some connection exists between these local abnormalities of both

individual tolerance?) these more subtle changes are masked in their initial stages by inflammatory processes as already described

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(c) Epidermophytosis, trichophytosis and moniliasis. Secondary toxic eruptions are ruled out on account of the absence of any primary cutaneous lesion.

(d) Infectious eczematoid dermatitis. The history of lesions, the absence of furuncles previous to the eruption, the macroscopic appearance and the sterile cultures of the pustules make the diagnosis of this condition appear to be extremely unlikely.

(e) Syphilis, occupational dermatitis and eczema. Andrews⁶ states "The palms and soles are rarely affected. Most cases so diagnosed eventually are proved to be due to syphilis, occupational irritants or eczema. Psoriasis does, however, at times affect these areas, forming diffuse erythematous, dry, scaling

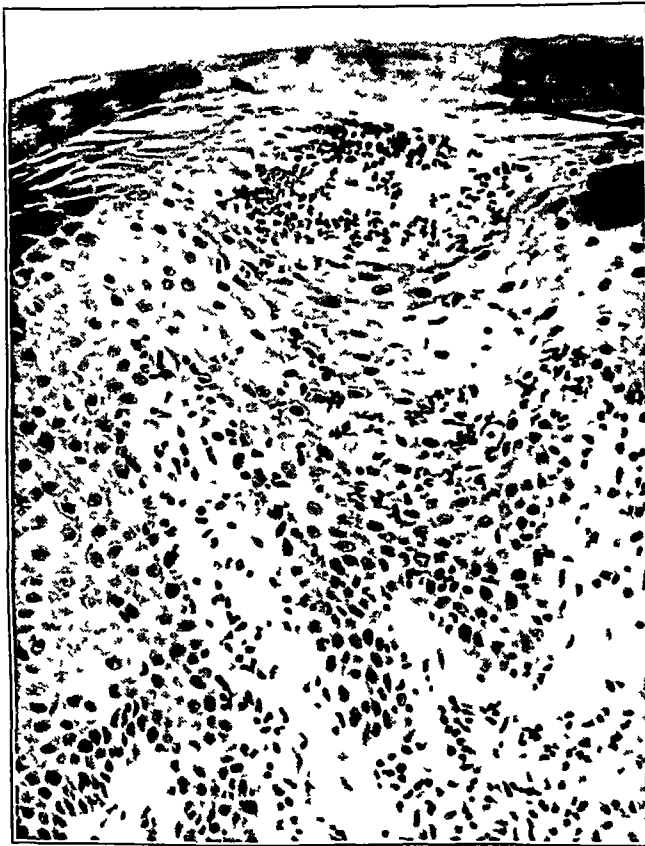


Fig 4—Higher power magnification of figure 3. Abscess formed chiefly of polymorphonuclear leukocytes, edema and leukocytic infiltration of rete deep to micro-abscess, lymphocytic infiltration of papillae ($\times 200$)

patches, or circumscribed, verrucous thickenings, sometimes linear." The absence of other syphilitic signs, the negative Wassermann and Kahn reactions of the blood, and the histopathologic picture make a diagnosis of syphilis untenable. As far as could be learned, the patient handles nothing at school or at home which might be the cause of a dermatitis venenata. The condition is not eczema of the palms and soles. The history, clinical appearance, histopathologic picture, and the presence of psoriasis elsewhere confirm this statement.

⁶ Andrews, G. C. *Diseases of the Skin*, Philadelphia, W. B. Saunders Company, 1930, p. 435.

COMMENT

According to Barber¹ and Ingram,² Strandberg was the first to suggest the possibility of these palmar lesions being psoriatic. Ingram states that Macleod was one of the first to suggest the term "pustular psoriasis." — A very appropriate title, it describes the macroscopic and microscopic appearances of the lesion well and has the added virtue of being a simple English term.

Barber³ recently stressed the importance of tonsillar infection in the causation and the removal of this focus of infection as an aid to treatment of the condition. He cites three cases in which removal of the tonsils caused either complete recovery or converted the pustular form of psoriasis into the common type. The patient whose case is recorded here gave a history of repeated attacks of tonsillitis, and tonsillectomy has been advocated. That these cases are notoriously difficult to clear up is mentioned by several who took part in the discussion.³ Goeckerman's⁷ method of using crude coal tar and ultraviolet light would be well worth a trial in view of his success in treating psoriasis vulgaris and erythroderma psoriaticum.

There are many arguments against the contention that these palmar and plantar lesions are psoriatic. However, it must be admitted that, bearing the following facts in mind, it is difficult to dismiss the diagnosis of pustular psoriasis: (a) history of a scaly eruption on the scalp followed in a few days by the simultaneous appearance of pustular lesions on the palms and then on the soles, after that, the appearance of typical psoriatic lesions on the trunk, arms and legs and finally dot-pitting of the finger-nails, (b) negative results in the search for fungi and bacteria in the pustules and scales, (c) a histopathologic picture which embraces the features of psoriasis vulgaris except that the micro-abscesses have enlarged sufficiently to be visible to the naked eye.

SUMMARY

1 A case of pustular psoriasis of the palms and soles, associated with psoriatic lesions on the usual sites, is recorded.

2 The laboratory observations confirm the clinical diagnosis.

3 The name "pustular psoriasis" is ideal for this form of psoriasis.

NOTE—Ebert's⁸ excellent paper on "A Psoriasiform Eruption with Pustular Exacerbations" appeared after the writing of this article. It is felt that the present article will supplement his findings and add proof to the contention that a pustular form of psoriasis does occur, although, admittedly, infrequently.

⁷ Goeckerman W. H. Treatment of Psoriasis. *Arch. Dermat. & Syph.* 24:446 (Sept.) 1931.

⁸ Ebert, M. H. A Psoriasiform Eruption with Pustular Exacerbations. *Arch. Dermat. & Syph.* 27:933 (June) 1933.

sis and wrinkling of this layer, it is probably increased per square unit of surface, thus producing the striking blackness of the papule. The dermal chromatophores are not increased.

(These histologic changes are precisely the same as those of the papules of pityriasis rubra pilaris, though, of course, the two conditions cannot be confused clinically.)

The acne papule in this condition resembles that of acne vulgaris generally, with the exception that the cellular infiltrate is negligible, in one case observed it consisted merely of a dozen eosinophils in a section of the comedo. This, of course, tallies with the clinical observation that avitaminosis acne in my cases never led to suppuration.

During the process of cure, the papule shows the following changes. First, there is a spontaneous extrusion of its core, this process taking a week or more. At the end of this stage the papule has become less prominent and presents an open pit in the center. Later the pit shrinks and ultimately disappears completely, so that after from four to six weeks of treatment nothing remains except a marked black macule.

I have assumed this dermatosis to be the result of a dietary deficiency in vitamin A, and before embarking on an academic discussion must enumerate the points which led me to this conclusion.

The diet given in the Uganda Central Prisons at the time when these cases were found was as follows: maize, 20 ounces a day, beans, 5 ounces, meat (dry), 2 ounces, nuts, 3 ounces, salt, $\frac{1}{2}$ ounce, and fresh vegetables (sweet potatoes), 10 ounces.

This diet and its relation to deficiency disease have been described elsewhere.² It is not necessary to go into the matter again here, for the prevalence of xerophthalmia is sufficient to prove a deficiency in vitamin A content. The points which led me to attribute this dermatosis to a deficiency of vitamin A are

1. Of 1,000 prisoners examined at the quarterly inspection referred to at the beginning of this paper, 81 were set aside for investigation and treatment for one or more of the following conditions: night blindness, xerophthalmia and dermatosis. Many of these suffered from acne also, but none was segregated for acne without presenting one of the other symptoms. The figures are: total number of prisoners segregated, 81, number with night blindness, 71, number with xerophthalmia, 45, number with the dermatosis, 74, and number with acne, 73.

It is thus seen that in one group of prisoners, comprising about 8 per cent of the total number of inmates in these prisons, were concentrated all the cases of known vitamin A deficiency (i.e., night blindness and xerophthalmia) as well as all the cases of the dermatosis under con-

² Mitchell J. P. Prison Diets and Morbidity, *East African M. J.* 10: 38 (May) 1933.

sideration It is obvious, too, that most of the 74 cases of this dermatosis showed one of the accepted manifestations of vitamin A deficiency

2 Treatment consisted of giving each of these 81 patients 1 ounce (31.1 Gm) of cod liver oil a day In other respects the normal routine was unchanged, and, of course, no alteration was made in the diet The results are shown in detail later, but for the purpose of this argument I quote the following incidence of cure after nine weeks: night blindness, 100 per cent, xerophthalmia, 100 per cent, and dermatosis, 98.7 per cent

The known constituents of cod liver oil are vitamin A, vitamin D and a group of fats and fatty acids of various degrees of saturation

(a) That vitamin D is not the offender is fairly obvious, it is synthesized by the action of sunlight on ergosterol, and the high rate of absorption of actinic rays by the melanin-rich skin of the African makes the occurrence of rickets practically unknown among uncivilized African communities

(b) A deprivation of fat only can be shown not to cause this dermatosis In Kampala there is a prison, controlled by the native administration, in which the diet consists exclusively of sweet potatoes A complete examination of the skins of the 250 inmates of this prison revealed a far from ideal condition, dermatologically Dry skins were common, and scabies and other parasitic diseases were almost universal, but the dermatosis that I have described was not seen in a single case Further, a careful inspection of the prisoners' eyes was carried out, and no cases of xerophthalmia were noted, nor was night blindness complained of Thus, on an almost fat-free dietary which is rich in vitamin A content, a dry skin may occur, but the papulofollicular dermatosis is not seen Incidentally, the inmates of the Central Prisons receive a fair amount of vegetable fat in their diet

(c) This leaves vitamin A, and the evidence given seems to show that either this or some other so far undiscovered fat-soluble substance is the curative factor in the dermatosis

3 During the past four months I have seen 2 cases of this dermatosis outside of prison, in the course of hospital routine The first patient was admitted for dysentery, and during my examination I noticed several papules identical with those which I have described The patient denied having been in prison recently, and the wage that he was earning seemed to preclude the idea of dietary deficiency I examined his eyes nevertheless and found that xerophthalmia was present in both On then inquiring into the details of his diet, it transpired that he lived on cassava only, and thus saved money for finery Both the xerophthalmia and the cutaneous lesions cleared up promptly under treatment with cod liver oil

The second patient whom I was asked to see had advanced xerophthalmia, dysentery and dermatosis. He was, and still is, mentally subnormal, and no history of his previous diet could be obtained. On treatment with intensive doses of cod liver oil and a diet rich in vitamin A a slow improvement in his general condition took place, so slow that I suspected an impairment of liver function and consequent failure to absorb and store vitamin A. His serum reaction was double positive, and a course of neoarsphenamine in cautious doses, combined with sodium thiosulphate, was given. At the present time his general condition is good and his cutaneous lesions have disappeared, but there is only slight improvement in the ocular condition.³

4 A small supply of an extract of vitamin A was obtained and given to 2 patients in daily doses of 6 minims (0.37 cc). At the same time the sweet potato portion of their diet—the only vitamin A container—was omitted, and both were placed under rigorous dietary supervision. Xerophthalmia and night blindness cleared up promptly in both cases. The dermatosis was cured in eight weeks in one case and was almost cured in seven weeks in the other, when the supply of the vitamin A extract avoileum gave out.

5 During an inspection of 300 of the inmates of Nairobi Prison, carried out during my stay there at the time of the Centenary Meeting, 30 cases of xerophthalmia were discovered. The proportion of patients suffering from xerophthalmia, night blindness and the dermatosis was found to be precisely the same as that obtaining in the Uganda Prisons.⁴

The following data were observed in the patients under treatment: average age, approximately 35; average duration of stay in prison, twenty-six months; longest period, seventy-eight months; and shortest period, three weeks. The prisoners were drawn from all parts of the country, and no especial tribal predisposition was noted. Their habitual diet prior to imprisonment consisted of sweet potatoes, green plantains, maize and other flours and occasionally meat. The incidence of the various manifestations was as follows: total number of patients observed,

3 Owen, H. B., and Hennessey, R. S. F. *Tr. Roy. Soc. Trop. Med. & Hyg.* 25: 367, 1932.

4 Dr. J. P. Mitchell and I went to Nairobi Prison not expecting to find any cases of vitamin A deficiency. We knew that the prisoners' diet contained ghee, and in the works of reference then available (Leitch, J. Neil, *Dietetics in Warm Climates*, London, Harrison & Sons, 1930), ghee was marked as a triple plus vitamin A container. The most recent work on this subject (Vitamins: A Survey of Present Knowledge, Medical Research Council, Special Report Series, no. 167, London, His Majesty's Stationery Office, 1932) assesses ghee as "O to single plus" only, and this explains our findings at Nairobi Prison, where, despite a daily ration of ghee, the same percentage of vitamin A deficiency occurs as in the Uganda Central Prisons.

81, number with night blindness, 71, number with xerophthalmia, 45, number with the dermatosis described, 74, and number with acne, 73. As already stated, treatment consisted solely of the administration of 1 ounce of cod liver oil to each man, in two daily doses of half an ounce each after meals.

The group of 81 patients was examined weekly, and alteration in any of the conditions noted. Cure was effected in from one to nine weeks. Represented graphically, this gives a rapid curve for the cure of night blindness, almost as steep a curve for xerophthalmia and slower ones for the dermatosis and acne.

Apart from the detailed improvement noted, this group of prisoners showed a rapid and marked improvement in their general condition. Their skins became oily and gleaming, and many volunteered the statement that they felt fitter than before. They contrasted markedly with the remaining prisoners, many of whom were on the borderline of clinical vitamin A deficiency. Actually, at a general inspection held one month after the time the original cases were discovered, 47 more cases were picked out, divided into sections as follows: night blindness, 42; xerophthalmia, 23, dermatosis, 30, and acne, 36. The average previous stay of these men in prison had been thirty-one months, and it is an interesting fact that of those who were segregated for any variety of avitaminosis A, only 10 per cent had been in prison for less than a year. The 2 cases of incidence within one month of entry into the prison were both in the juvenile section (boys about 15 years of age).

COMMENT

The medical literature has so far been remarkably reticent regarding the changes in the skin in avitaminosis. The only attempt that I can find at a meticulous description of the lesions is that of Pillat,¹ whose paper Dr H. B. Owen abstracted for me. Pillat's cases and mine, however, agree in only a few particulars. In both the skin is dry and scaly, and in both there are comedones on the face and chest. Here, however, the resemblance ceases, Pillat's *dermomalacie* is a decay, associated with a diminished resistance to pyogenic bacteria and consequent multiple abscesses. The condition in my cases is a dyskeratosis, with changes consequent on this condition and without signs of sepsis or softening.

It must be remembered when comparing the two sets of cases that we are dealing with different races. Pillat's patients were Chinese, mine are African. Further his patients were seen in private practice (one, at least, was of the coolie class), and there is no means of knowing whether they had been accustomed to frequent washing. Mine were all prisoners, and had a daily bath with soap.

What, then, are the true dermal manifestations of vitamin A deficiency? Though always alluded to as the anti-infective factor, there is little evidence of detail that vitamin A subserves such a function in man. The formation of leukocytes, bacteriolysins, precipitins, etc., seems to continue normally in spite of an avitaminosis⁵. It is probable that the infections which occur in some cases of vitamin A deficiency are due to breaches in epithelial surfaces permitting a more than normal invasion of bacteria, with which the body's normal defense mechanism is unable to cope. If Pillat's patients were subject to general undernourishment as well as to a specific deficiency in vitamin A, this would explain the differences between our findings. My cases would then represent the dermatosis of vitamin A deficiency, while his would have superimposed the results of general undernourishment, a possible deficiency in other accessory food factors and long-standing neglect.

Be that as it may, I can still hope that the unique experience that I have had in studying the pure avitaminosis may be of some value to future investigators.

The Director of Medical and Sanitary Services, Uganda Protectorate, gave permission to publish this paper. The officials of His Majesty's Central Prisons, Uganda, granted me facilities in this investigation. The authorities in Nairobi, Kenya Colony, permitted, and aided in, the examination of their prisoners and the demonstration of typical cases at the Centenary Meeting.

5 Hennessey, R S F. *Tr Roy Soc Trop Med & Hyg* 26 55, 1932

Clinical Notes

FORMULA FOR A NEW LOTIO SULPHURATA

Preliminary Note

E WILLIAM ABRANOWITZ, M.D., NEW YORK

For many years a preparation known as lotio sulphurata alba has been employed for the treatment of acne, rosacea and allied conditions that require some stimulating, keratolytic and astringent action. The mixture is prepared with 4 or 8 cc each of a saturated ($1\frac{1}{2}$ 1) solution of zinc sulphate and a saturated (1 2) solution of sulphurated potassa in 100 cc of rose water. Frequently it is necessary to increase the amount of these active ingredients fourfold. The stronger preparation is known as lotio sulphurata concentrate. It is not easy to make up unless the pharmacist has had special experience with its preparation.¹ This is particularly true of the concentrated preparation.

Several months ago, in preparing lotio sulphurata concentrate, a druggist, instead of taking the sulphurated potassa solution that he had on hand, by mistake added solution of sulphurated lime (Vlemminckx's solution) and in this way inadvertently showed a new way of preparing lotio sulphurata.

I have tried the new preparation in a number of cases of acne and rosacea and have found that it possesses some definite advantages over the old lotio sulphurata. It is just as easy to apply and is much more readily removed. A preparation made three months ago is still in good condition, whereas the first type of lotio sulphurata concentrate of that age would be too dry to use. The newer compound can be made easily, the appearance is that of a smooth, white, gritless mixture of the consistency of greaseless cream.

In order to avoid an excess of the active ingredients, a proper proportion was established by calculated composition with the resulting formula. This was prepared with the help of Dr. E. F. Williams of the department of biochemistry of the New York Post-Graduate Medical School and Hospital. The prescription is as follows:

Solution of sulphurated lime, N. F. (filtered)	20 cc
Saturated ($1\frac{1}{2}$ 1) solution of zinc sulphate in rose water (filtered)	20 cc
Glycerin	5 cc

From the Department of Dermatology and Syphilology of the New York Post-Graduate Medical School and Hospital, Columbia University.

¹ Raubenheimer, Otto. Lotio Alba. J. Am. Pharm. A. 3: 692 (May) 1914.
Peacock, J. C., and Peacock, B. L. DeG. Some Notes of an Interesting Prescription (Lotio Alba), Proc. Pennsylvania Pharm. A. 1914, p. 256.

Weaker concentrates may be secured without further difficulty by the addition of larger amounts of rose water. After the reaction caused by mixing these ingredients subsides, an analysis shows the following constituents

	Percentage
Zinc sulphide	8
Sulphur (amorphous)	5
Calcium sulphate	12
Calcium thiosulphate	6
Water	69
	<hr/> 100

My associates and I are now using the mixture at the skin clinic of the Post-Graduate Medical School and Hospital and we are studying the rationale of the compound as based on its individual components. We hope that others will use it to test its value. A more detailed report will be submitted if continued good results warrant.

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Abstracts from Current Literature

EDITED BY DR HERBERT RATTNER

MULTIPLE BENIGN EPITHELIOMA OF THE SCALP F RONCHESI, Am J Cancer 18 875 (Aug) 1933

Under this title and the descriptive term "turban tumor" the author presents a comprehensive case report and a review of the literature regarding a condition which is commonly designated as endothelioma capitis or cylindroma of the scalp. He defines the condition as a multiple, benign, familial, nodular, turban-like, basal cell epithelioma of the scalp, with cylindromatous degeneration. The lesions appear to arise from the epithelium of the sebaceous glands and bear a definite relationship to adenoma sebaceum and epithelioma adenoides cysticum. The nodules appear singly or multiply in adolescence or in early adult life, they occur more commonly in females and increase in numbers and enlarge in size. Diagnosis is based on the large number of lesions and their slow growth, varied size, firm, rubber-like consistence, pink or bluish hue and lobulated or pedunculated shape. Removal of a few tumors at a time with the cutting current or scalpel is advocated in preference to treatment with roentgen rays or radium, which appear ineffectual.

THE RÔLE OF SODIUM, POTASSIUM, CALCIUM AND MAGNESIUM IN CANCER M J SHEAR, Am J Cancer 18 924 (Aug) 1933

The author summarizes a ninety-four page review with the statement that sodium appears to have neither an inhibiting nor an accelerating effect on the growth of tumors, that potassium may have a stimulating effect, while calcium may have a very slight retarding effect, and that magnesium does not appear to have the inhibitory effect that has repeatedly been claimed for it. This type of research has not yet advanced to the point where it can be applied practically in therapy.

MULTIPLE HEMANGIOMAS SHOWING CERTAIN MALIGNANT CHARACTERISTICS IN AN INFANT A C TAYLOR and E MOORE, Am J Cancer 19 31 (Sept) 1933

The authors preface their article with the remark that a survey of the literature indicates that multiple hemangiomas are not uncommon in various organs. They report a case of multiple hemangiomas in an infant, in which the skin, liver and lungs were involved. The invasion and destruction of hepatic tissue by the hemangiomatous growth and the appearance of scattered hemangiomatous nodules in the lungs, which were possibly of a metastatic type, suggested potential malignancy, though the cellular changes characteristic of malignancy were not observed.

H R FOERSTER, Milwaukee

LYMPHOGRANULOMATOSIS VENEREA W E COUTTS, J MARTINI HERRERA and F LANDA PERRONI, Am J Surg 21 96 (Oct) 1933

The authors briefly review the historical aspects of the disease. As a result of their investigations, they believe that the virus that causes lymphogranulomatosis is of buccal origin, and that coitus analis is responsible for the rectal syndrome seen in the condition. They believe that all of the conditions which fall under Durand, Nicolas and Favre's denominations are not one and the same disease for the following reasons. Of eighty-two men presenting subacute inflammation of the inguino-cruural and deep iliac lymph nodes, thirty-two showed no external

lesion to explain the lymphatic involvement. Of the thirty-two patients, the Frei test was positive in twenty-two, and the authors believe that Frei's reaction is not specific. They make a differentiation between cases of inflammation of the inguino-iliac lymph glands in which a site of inoculation can be established and those in which no primary lesions can be found. In cases in which a primary lesion is found the symptoms are as follows: Ganglionic inflammation, usually one-sided, appears a few days after the appearance of a primary lesion which is negative on dark-field examination. The lymph nodes show a marked tendency to suppurate, with the establishment of fistulas. Fever and malaise accompany the lymphatic involvement. There is frequently an associated mononucleosis with lymphopenia. In cases in which no primary lesion is found, the symptoms are as follows: The onset speaks in favor of a systemic invasion. The involvement of the lymph nodes is preceded by fever, arthralgia, malaise and general discomfort. Eosinophilia is constant. There is inflammation of the superficial lymph nodes, the deep iliac nodes and the abdominal lymph glands. The arthralgia is transitory and resembles gonorrheal arthritis. The lymph glands do not suppurate but persist as hard, scirrhous nodes for several months. The disease usually lasts for about three months, with gradual improvement in constitutional symptoms.

PERLSTEIN, Chicago

SYPHILITIC PERIPHERAL VASCULAR DISEASE L. G. HERMANN, *Am J Syph* 17 305 (July) 1933

The author describes three types of peripheral vascular disturbances due to syphilis: the angiospastic type, the endarteritic type and the thrombo-arteritic type.

The angiospastic type occurs in the upper extremities and manifests itself as a chronic arteriospasm associated with constant pain in the distal parts of the affected extremity. It is the result of periarteritis of the smaller or medium-sized vessels which produces chronic irritation of the perivascular plexus of nerve fibers, giving rise to reflex vasomotor disturbances in the form of chronic vasospasm. An illustrative case is reported.

The endarteritic type is most commonly seen in the legs and feet and manifests itself by constant pain, intermittent claudication and evidence of organic obliteration of the arteries. A case of a condition which the author believes can be designated clinically as syphilitic endarteritis obliterans is reported.

The thrombo-arteritic type is uncommon. It manifests itself by extensive organic occlusion of all the major arterial pathways of the extremities, without evidence of gross gangrene. A case is presented which illustrates this type of syphilitic peripheral vascular disease.

In regard to treatment, active antisypilitic treatment plus care of the skin to prevent infection is of primary consideration. After the antisypilitic treatment has arrested the progress of the disease, the patient should be given the benefit of any further collateral circulation that can be brought about by the use of the intermittent negative pressure environment for the affected extremities. The apparatus and the technic used to produce an intermittent negative pressure environment are described. The author believes that this method is the most effective means of bringing about the development of an adequate collateral circulation in extremities with an extensive obliterative arterial disease, regardless of the cause.

A METHOD TO INTRODUCE LARGER AMOUNTS OF THE ARSPHENAMINES INTO THE CENTRAL NERVOUS SYSTEM J. WITTENBERG, *Am J Syph* 17 339 (July) 1933

As drugs of the epinephrine series are powerful dilators of the cerebral vessels in man, and as the bulk of arsphenamine injected intravenously is deposited in the tissues in a few minutes, it was thought that by taking both these facts into consideration and by proper timing an increased amount of arsphenamine could be introduced into the central nervous system. The author reports on a small

number of patients who were treated by the intravenous injection of ephedrine followed within two minutes by the intravenous injection of neoarsphenamine. The treatment is safe with properly selected patients, and a larger amount of arsenic is found in the cerebrospinal fluid following this modified form of treatment than is the case with the method generally used. This method is worthy of further study.

THE REACTION OF SPIROCHETA PALLIDA, RECURRENTIS AND TRYPANOSOMA EQUIPERDUM TO ARSENOBENZOL PREPARATIONS F FOLDVÁRI, Am J Syph 17 346 (July) 1933

The author observed that by impregnation a part of the arsphenamine preparations is tied up to trypanosomes as well as to Spirochaeta recurrentis and Spirochaeta pallida in a way as yet unknown. This fact was considered of no value, because it was thought that previous fixation with methyl alcohol had probably produced a changed condition in the germs.

However, in another series of tests, when treatment with arsphenamine was applied without previous fixation with methyl alcohol, the germs became similarly impregnated. This evidence seems to show that arsphenamine preparations are taken up by the germs. Impregnation after previous treatment with parafuchsin seemed to interfere with the intensity of impregnation, as compared with the results obtained without previous treatment with parafuchsin. This, perhaps, might serve as proof for the thesis that arsphenamines are taken up by the trypanosomes and that the albumin contained in their bodies reacts with the arsphenamine owing to its affinity for the latter.

THE IRON REACTION IN PARETIC NEUROSYPHILIS H MERRITT, M MOORE and H C SOLOMON, Am J Syph 17 387 (July) 1933

Iron which is present in all normal brains in a fairly characteristic distribution is spoken of as endogenous iron, it is found chiefly in the basal ganglions and in the dentate nucleus. Pathologically, iron is found in the brain in two general types of diseases. In diseases in which red blood cells have been extravasated into the tissues iron pigment is found in and near the areas where the hemorrhage or hemorrhages occurred, and it is present in dementia paralytica, in which it is known as *Paralyseisen*, or the iron of dementia paralytica. It is found in a very characteristic manner. When brain tissue is stained with Turnbull's blue, small spicules of iron pigment are found in the cells of the walls of the blood vessels and in the body or processes of the microglia cells. This iron is distributed diffusely through the cortex, basal ganglions and other regions of the brain. Many authors believe that an absolute diagnosis of dementia paralytica can be made from the iron reaction. In meningitis, multiple sclerosis and other neurologic disorders deposits of pigment are not found, and even in the study of brains in which hemorrhage has occurred confusion is not likely, because in these brains the iron is found in circumscribed areas. In nonparetic neurosyphilis, deposits of iron are usually absent. In slowly developing or in stationary cases the iron reaction is commonly very weak, and at times one may miss it.

The source of the iron pigment is not clear. As dementia paralytica is the example par excellence of spirochetal infection of the brain, and as it is the only disease in which this form of iron is found, it would seem logical to conclude that the presence of iron is closely related to the primary nature of the pathologic process.

WASSERMANN REACTION IN UNTREATED SYPHILIS E T HOVERSON, G W MORROW and R O HAWTHORNE, Am J Syph 17 392 (July) 1933

The records of fifty-nine untreated patients who gave a positive Wassermann reaction on admission to the Kankakee State Hospital were examined. Eighteen, or 30.5 per cent of these patients, gave a negative Wassermann reaction after an

average length of stay in the institution of ten and two-tenths years. It is concluded that a reversal of the positive serologic finding to negative findings occurred in these patients without any antisyphilitic treatment. REUTER, Milwaukee

CALCINOSIS UNIVERSALIS BARNEY J HEIN, *Arch Surg* **26** 389 (March) 1933

A case of diffuse deposition of calcium in the fasciae is presented in a child, aged 6½ years. There were indurated areas in the upper and the lower extremities. Roentgen examination showed calcareous deposits in various parts of the body. The blood calcium was 16 mg in February, and 10 mg in August. The child recovered with the use of heliotherapy, and progressive roentgenograms showed a gradual disappearance of the calcium.

KAISER, Rochester, N Y [*Am J Dis Child*]

THE REACTION OF STANDARD BREEDS OF RABBITS TO EXPERIMENTAL SYPHILIS P D ROSAHN, *J Exper Med* **57** 907 (June) 1933

The conclusions drawn from the experimental work on the response to syphilitic infection were that standard bred Havana and Dutch rabbits were resistant to infection, while English, Himalayan and Rex rabbits were susceptible.

STUDIES ON INFLAMMATION IX A FACTOR IN THE INVASIVENESS BY PYOGENIC BACTERIA V MENKIN, *J Exper Med* **57** 977 (June) 1933

Inflammatory irritants, when injected into tissues, rapidly form a mechanical barrier in the form either of coagulated plasma or of thrombosed lymphatics, or of both. Staphylococci were found to stop the draining of dye into tributary lymphatics when the dye was injected as early as one hour after the injection of the micro-organisms. Pneumococcus type I, used to produce cutaneous inflammation, caused the injected dye to be retained when it was injected after six hours or later. In the case of Streptococcus haemolyticus, the dye drained readily for the first thirty hours after the inflammatory reaction began. After the inflammation was of forty-five hours' duration, the dye remained fixed. JAMIESON, Detroit

AN OUTBREAK OF DERMATITIS IN COTTON MILLS DUE TO VARNISH LOUIS SCHWARZ and CHARLES L POOL, *J Indust Hyg* **15** 214 (July) 1933

In nineteen of thirty-two workers exposed to varnish on heddle frames dermatitis of the hands and forearms developed after from three days to four weeks of contact with the varnish. In twelve of thirteen patients, patch tests with the varnish gave positive results. Of the twelve who were found to be sensitive to the varnish, eight were tested further with various ingredients of the varnish. Two showed sensitivity to cumaron resin and ceresin, one was sensitive to resin only, four were sensitive to ceresin but not to the cumaron resin, and one was sensitive to neither alone but reacted positively to the varnish containing them. The varnish of the frames was more irritating than dried fresh varnish, probably because of the hydrochloric acid given off by the ceresin containing chlorine after long standing. The cumaron resin contained sulphuric and sulphonic acids. The addition of physiologic solution of sodium chloride to the materials tested for the purpose of stimulating perspiration added to the irritating action of these substances in susceptible persons.

THE RELATION OF CARCINOGENICITY OF MINERAL OILS TO CERTAIN PHYSICAL AND CHEMICAL CHARACTERISTICS OF THESE OILS R LATH, *J Indust Hyg* **15** 226 (July) 1933

The author determined the refractivity of a large series of mineral oils which had been previously tested for carcinogenic properties, as well as the iodine values and permanganate oxidation values. He found that, with the exception of

Pennsylvania oils, the refractivity of an oil is a good index of its carcinogenic strength. Oils with a value of 0.56 and over are very toxic, while those under 0.55 are nontoxic, oils with values between these vary in general in toxicity, those of lower value being relatively nontoxic, while those of higher value are likely to be toxic but are not necessarily so. Toxicity varies similarly with iodine value, if the oils have not been treated, if the value is above 26, the oil is likely to be toxic, and if the value is above 30, it is almost certain to be so. In treated oils the toxicity is apt to be reduced disproportionately to the difference in iodine value. The permanganate oxidation values are not indicative of the carcinogenic properties of the oils as determined by the method employed by the author.

WIEDER, Milwaukee

RINGWORM OF THE TOES IN STUDENTS AND DISPENSARY PATIENTS. EMANUEL MUSKATBLIT, New York State J Med **33** 632 (May 15) 1933

Muskatblit found, on examination for ringworm of the toes of 100 dispensary patients and 112 medical students, unselected, that in 89 per cent of the 212 cases there were more or less pronounced changes of the skin in the toe-webs, mostly of macerative type, suggestive from the standpoint of mycotic infection.

Fungi were found microscopically or in cultures in 31.6 per cent of all cases examined. The percentage was higher in students (34.8) than in dispensary patients (28).

Microscopic examination alone was positive in 27 per cent of all the cases. This percentage increased to 31.4 when clinical changes in the skin were present, and reached 47.4 in the group of patients with marked lesions of the skin. Two types of fungi could be distinguished in microscopic preparations: true hyphomycetes and yeastlike fungi.

Cultures were positive in 17.9 per cent of all cases, in 50.8 per cent of microscopically positive cases and in 5.2 per cent of microscopically negative ones. No fungi were found either microscopically or culturally in clinically healthy persons.

LICHENOID SARCOID (BOECK). REPORT OF A CASE WITH REVIEW OF THE LITERATURE. JOSEPH L. MORSE, New York State J Med **33** 686 (June 1) 1933

Reports on ten cases of Boeck's sarcoid with lichenoid lesions were found in the literature and reviewed. In only two cases, those of Wright and of Kissmeyer, were there lichenoid lesions alone without other lesions typical of sarcoid. The diagnosis in these cases can be positively established only after careful histologic study, but in clinically atypical lichenoid eruptions this form of sarcoid should be kept in mind. A case of this type which responded to treatment with gold sodium thiosulphate given intravenously is reported.

SQUAMOUS CELL EPITHELIOMATA OF THE SKIN OF THE FACE. EUGENE F. TRAUB and JESSE A. TOLMACH, New York State J Med **33** 875 (July 15) 1933

Squamous cell epithelioma of the face not involving the mucous membrane surfaces has received little or no attention in dermatologic textbooks, and, usually, has not been recognized clinically in the early stages. The lesion examined was of a type not as infrequent as had been generally supposed. It presented a very definite and readily diagnosable picture. Twenty-six cases with follow-up histories are reported in detail. The rapid early development of the lesion is stressed as compared to that of a basal cell growth. In five cases there was a history of trauma preceding the appearance of the nodule. In nine cases, the lesion was removed by a wide excision with an endotherm knife alone, and in eight cases this was combined with irradiation of the base. Treatment by radium alone was given in one case and by roentgen rays alone in one case and endothermy was performed with a knife in seven cases. Twenty-one of the cases showed excellent

cosmetic results and apparent cures after periods of observation ranging from two months to five years. Thirteen patients have remained well for at least two years. In no case has wide removal been followed by local return of the lesion, and yet the cosmetic results were quite satisfactory. In none of the cases, apparently, have the lymph nodes draining the affected areas been involved. Irradiation was not practiced before removal, but in the early cases of this group, removal of the lesion was immediately followed by either roentgen or radium therapy. As this procedure delayed healing and seemed to be of no distinct advantage in adequately removed lesions, it has been discontinued.

TOXIC ACTION OF METALS IN ALOPECIA AREATA C. N. MYERS, BINFORD
THRONE and JEROME KINGSBURY, New York State J. Med. **33** 991 (Aug. 15)
1933

The authors believe that as a result of their studies the "toxic theory" of causation of alopecia areata is further substantiated. Twenty-nine per cent of the patients with alopecia areata showed abnormal determinations of basal metabolism, 71.83 per cent of the cases showed lymphocytosis, 75.75 per cent of the urines examined showed the presence of metals (arsenic, lead). The elimination of diseased teeth, tonsils, sinuses or other toxic possibilities, including the metals, resulted favorably in the restoration of the hair in the majority of the cases. In patients with a lowered basal metabolic rate glandular therapy was added to the treatment.

TRAUB, New York

ARSPHENAMINE DERMATITIS A. G. SCHOCH, Texas State J. Med. **29** 372
(Oct.) 1933

In seeking to explain the pathogenesis of postarsphenamine dermatitis, one school of thought holds that it results from toxemia produced by the arsenic, whereas another insists that it rests on the basis of an acquired allergic state—a specific sensitization to arsphenamine. However, neither the toxic nor the allergic hypothesis satisfactorily explains all of the phenomena associated with the dermatitis, and it is most likely, this writer feels, that both mechanisms play a part, one or the other predominating in varying degrees in the given case.

The allergic type, he claims, is not a disease of the skin per se, for it affects other systems as well. The blood picture frequently shows leukocytosis, eosinophilia and a low nuclear index.

A recurrence of the dermatitis can now most certainly be foretold by use of the patch test, a positive reaction being an absolute contraindication to further arsphenamine therapy.

GANDY, Houston

INDUSTRIAL ANTHRAX F. W. ENRICH, Brit. M. J. **2** 50 (July 8) 1933

The author's observations are based on 340 cases of cutaneous anthrax and 24 cases of pulmonary and gastro-intestinal anthrax, which occurred in Bradford the chief center of industrial anthrax in Great Britain. Cutaneous anthrax is seen most frequently on exposed parts, but the skin of the fingers is rarely attacked. In tanners, the neck is a frequent site, and lesions have been noted on the shin, thigh, abdominal wall and chest. The diagnosis is primarily bacteriologic, the malignant pustule usually considered typical of anthrax only can be simulated by a vaccine pock or a streptococcic or pneumococcic infection, and in 1 case the hay bacillus gave rise to a similar lesion. Aberrant forms are not infrequently seen. Instead of the coal-black central eschar surrounded by a ring of vesicles on an angry, red and brawny base, there may be an eschar only, bullae may predominate, or white edema may replace the red area. In 1 case, in which the lesions occurred on an arm, the edema was so extensive as to disfigure the part. Microscopic examination is usually sufficient, so it is a mistake to withhold specific treatment for cultural confirmation. Treatment is by the injection of arsphenamine.

and antianthrax serum Two moderately large doses of arsphenamine are given at an interval of a day, and two injections of serum are given intravenously or subcutaneously—80 cc the first day, followed by 60 cc the next day A total of 300 cc of serum has been given with no ill effects The affected parts must be put at rest Treatment by excision has been abandoned With this method the results have improved so that among the last 200 patients treated the mortality rate has been only 5 per cent The prognosis depends largely on an early diagnosis Systemic anthrax is briefly considered, and the article contains also an interesting paragraph on unusual sources and modes of infection

THE TREATMENT OF RODENT ULCERS N S FINZI, *Brit M J* 2 137 (July 22) 1933

The treatment recommended is a mild erythema dose of filtered radium, to be repeated after six weeks if any evidence of growth visible to the naked eye remains Then, at intervals of six and fourteen weeks after the last curative dose, two prophylactic doses are given With this method the author has obtained cure in 99 per cent of early cases, statistics are not furnished It is only when dealing with "other people's failures" (i e, unfiltered or lightly screened radiations) that the results are not so good Dr Roy Ward and Dr A J Durden Smith (*Brit M J* 2.212 [July 29] 1933) challenge the last statement of Dr Finzi In a series of about 1,700 consecutive cases they had the best results from a single application of unscreened radium Dr R T Brain also protests against Dr Finzi's criticism of unscreened radiation It is his experience that results obtained with gamma ray therapy seemed to be better than those obtained with the unscreened plaque, but careful analysis shows this to be more apparent than real This applies to superficial lesions, older cases require adequately screened irradiation

OCCUPATIONAL DERMATITIS W G HARVEY, *Brit M J* 2 321 (Aug 19) 1933;
OCCUPATIONAL DISEASES OF THE SKIN JOHN C BRIDGE, *ibid*, p 324

These two excellent articles deal with the subject generally The first article contains a full summary of the literature, the second is concerned rather with the industrial point of view and is chiefly a statistical study Harvey believes that dermatitis and eczema should be regarded as synonymous terms He discusses in detail bakers' dermatitis and dermatitis caused by dyes, especially as to pathogenesis He considers the former to be a disease in which a series of injuries have a cumulative effect and act like eczematous irritation Bridge discusses more fully the prophylactic measures which are employed in industry The articles are both source papers and should be read, as they do not lend themselves to abstracting

EPITHELIOMA OF RODENT TYPE IN A NATIVE OF BOUGANVILLE, TERRITORY OF NEW GUINEA C MERVYN DELAND, L B BULL and J B CLELAND, *M J Australia* 1 712 (June 10) 1933

The interest of this case is in the great rarity of such a growth on a black skin, the presence of granules of melanin pigment in some of the tumor and stroma cells and the age of the patient, 30 years

RATTNER, Chicago

FAVORABLE INFLUENCE OF EXFOLIATIVE DERMATITIS COMPLICATING PSORIASIS
GOUGEROT and PATTE, *Bull Soc franç de dermat et syph* 40:106 (Jan) 1933

A patient with widespread psoriasis of long standing was cleared of lesions by the intervention of an acute generalized exfoliative dermatitis, and the authors point out the analogy between this case and the favorable influence exerted on syphilis by postarsphenamine dermatitis

NATURE OF LICHEN PLANUS M G MILIAN, Bull Soc franç de dermat et syph 40 114 (Jan) 1933

Various arguments which are set forth in favor of the view of a close relationship between lichen planus and tuberculosis may be summarized as follows (1) the occurrence of familial and conjugal lichen planus, (2) the histologic resemblance between the two diseases, (3) the response of lichen planus to therapeutic agents used in the treatment of tuberculosis (e g, gold, neoarsphenamine and ultraviolet rays), (4) the frequently noted appearance of lichen planus, or lichen planus-like lesions, after treatment with a gold compound in tuberculous conditions, which suggests a biotropic eruption of tuberculous nature, (5) positive tuberculin reactions in lichen planus, (6) the clinical resemblance between tuberculous lesions and those of lichen planus (e g, lichen corne and verrucous tuberculosis and lichen nitidus and tuberculids)

POSTARSPHENAMINE NITRITOID CRISIS AND PURPURA SEZARY and A DURUY, Bull Soc franç de dermat et syph 40 131 (Jan) 1933

A young woman with early syphilis was given a course of ten injections of bismuth and neoarsphenamine concurrently. Several days after the last injections a purpuric eruption developed on the lower extremities, accompanied by gingival hemorrhages. Eight months later a hematologic examination showed no abnormalities, therefore, a second course of treatment was begun. A single injection of 15 cg of neoarsphenamine immediately provoked a violent nitritoid crisis followed four hours later by a new outbreak of purpura and hemorrhages, similar to the first. The only anomaly of the blood found was irretractability of the clot, a common finding in many conditions, and therefore of small significance here. It is well known that postarsphenamine purpura is generally a late accident and nearly always accompanied by gross changes in the blood. The suggestion is advanced by the authors that the cause of the nitritoid crisis and of the purpura in their patient was probably identical, namely, a marked vasodilatation of the capillaries of the skin brought on by some perturbation of the sympathetic system which precipitates first the nitritoid crisis and then the purpura.

GANDY, Houston, Texas

NEVUS SEBACEUS OF THE FACE E REDAELLI, Gior ital di dermat e sif 74 122 (Feb) 1933

The author reports a case of sebaceous nevus situated on the left side of the forehead and on the left cheek. Differential diagnosis with adenoma sebaceum is considered. Histopathologic examination showed the lesions to be composed of huge lobuli of sebaceous glands of apparently normal structure.

POSTARSPHENAMINE PSORIASIS L CIARROCCHI, Gior ital di dermat e sif 74 149 (Feb) 1933

Ciarrocchi reports a case of psoriasis vulgaris which appeared suddenly in a patient with syphilis after the sixth dose of neoarsphenamine. On the basis of his investigations of the endocrine system of this patient, Ciarrocchi concludes that the condition was due to an early syphilitic involvement of the thyroid gland, aggravated by the biotropic action of neoarsphenamine. The patient recovered entirely under thyroid therapy and on the continuation of injections of arsphenamine.

PARDO-CASTELLO, Havana, Cuba

RAYNAUD'S DISEASE IN AN EIGHT YEAR OLD CHILD MARTIN GONZALEZ-ALVAREZ, *Pediatría española* 22 97 (Feb) 1933

Raynaud's disease, which is so rare in childhood, occurred in a child of 8 years. The first symptoms appeared at the age of 6 and began with severe pain in the affected extremities. The pain was followed by inflammatory manifestations

and edema. Rose-colored, wheal-like spots were general over the body. The skin was very dry. Infarcted areas developed proximal to the painful regions. The lesions at times showed regression of symptoms followed again by exacerbation. The Mantoux reaction was strongly positive. The Wassermann reaction was negative. The typical picture of Raynaud's disease with loss of three end phalanges of the right hand and two of the left hand finally developed.

The roentgenologic thoracic findings indicated extensive tuberculous involvement. Application of both dry and moist heat gave relief to the extreme pain in the affected extremities.

The author advocates roentgen therapy over the suprarenal regions. The ultimate prognosis in these cases is very grave.

SCHLUTZ, Chicago [AM J DIS CHILD]

THE CHEMICAL INVESTIGATION OF PSORIASIS. BERNHARD ZORN, Dermat Wchnschr 96 89 (Jan 21) 1933

The scales from an untreated patient with psoriasis were collected and freed as much as possible from extraneous matter, such as blood and hair. They were then submitted to a detailed quantitative chemical examination. The findings are summarized in the following tabulation:

	Water-Containing Scales, Mg Per 100 Gm	Water Free Scales, Mg Per 100 Gm
Nitrogen	13,160	14,490
Calcium	136	150
Magnesium	27.5	30.3
Sodium	644	709
Potassium	306	337
Phosphorus	15.1	16.6
Total halogens	309.8	341
Iodine	Not demonstrable	Not demonstrable
Sulphur	855.3	941.3

CHOLESTEREMIA IN LUPUS ERYTHEMATOSUS. B. W. JLINSKY, Dermat Wchnschr 96:739 (June 3) 1933

In a series of thirty-three patients with lupus erythematosus, Jlinsky found that the cholesterol content of the blood averaged a little higher than that in normal patients.

SCARLET FEVER. KURT SCHIRLITZ, Dermat Wchnschr 96 746 (June 3) 1933

The author reviews the 106 cases of scarlet fever seen during the first nine months of 1932. The complications encountered were disease of the kidneys, 53 per cent, disease of the ears, 22 per cent, rheumatism, 17 per cent, endomyopericarditis, 5 times, and thyroiditis, paratonsillar abscess and pulmonary abscess, each once.

TROPHEDEMA OF MEIGE-MILROY. L. LEVEN, Dermat Wchnschr 96 777 (June 10) 1933

A boy, aged 19, had a localized area of edema in the region of the right heel which had been present as long as he could remember. Examination showed a feminine distribution of the hair, moderate hyperthyroidism and spina bifida. The condition was considered to be an example of Meige-Milroy disease.

AN UNUSUAL CASE OF PURPURA. EMANUEL WOHLSTEIN, Dermat Wchnschr 96:783 (June 10) 1933

A woman, aged 42, acquired polyarthritis during the course of which acute tonsillitis occurred. Later hemorrhagic nephritis and purpura appeared. The purpura consisted of purpuric, nonconfluent macules and of elevated oval, circular and ringed papules.

TREATMENT OF LICHEN RUBER PLANUS BY HYPNOSIS A. KARTAMISCHEW,
Dermat Wchnschr 96 788 (June 10) 1933

The author treated eight patients suffering from lichen planus by suggestion. He followed the method used by Bloch and others in treating warts. In four of the cases a complete cure was obtained, in three the condition was improved, and in one it was unchanged.

URIC ACID PSORIASIS AND GOUT BERNHARD ZORN, Dermat Wchnschr 96 821
(June 17) 1933

Fifty grams of psoriatic scales was gathered from a single patient. The uric acid content was determined to be 306 mg per hundred cubic centimeters. The author believes that this high uric acid content explains the frequent association of gout with psoriasis.

GRENZ RAY TREATMENT OF VITILIGO W. WOLFFENSTEIN, Dermat Wchnschr 96 828 (June 17) 1933

The author treated six patients with vitiligo by means of supersoft roentgen rays. The method followed was that of generalized irradiation as described by Bucky. The areas of vitiligo received no direct radiation. One case in which the patient showed marked improvement is described in detail, and the author reports three other cases in which the patients were definitely benefited, and two in which the patients failed to respond.

DEMONSTRATION OF TUBERCLE BACILLI BY THE METHOD OF RAMEL IN
RHEUMATOID CUTANEOUS CONDITIONS AND IN LUPUS ERYTHEMATOSUS
R. M. BOHNSTEDT, Dermat Wchnschr 96 865 (June 24) 1933

Following the technic of Ramel, the author attempted to demonstrate tubercle bacilli by the transfer of urinary sediment and blood to animals in one case of erythema nodosum, in six cases of erythema exsudativum multiforme, in two cases of lupus erythematosus and in one case of lymphogranulomatosis. In no instance was a positive result obtained.

TREATMENT OF PSORIASIS WITH SODA BATHS OTTO STEINER, Dermat Wchnschr 96 909 (June 30) 1933

The author gives in some detail a description of the method of giving soda baths to patients with psoriasis. He indicates that the treatment is of considerable value in this disorder.

OBSERVATIONS ON THE PRESENT QUESTIONS OF DERMATOMYCOLOGY. III
EPIDEMIOLOGY OF FAVUS C. L. KARRENBERG, Dermat Ztschr 66 198
(May) 1933

Favus in Bonn and the Surrounding Region—Between 1900 and 1932, 274 cases of favus were seen at the clinic at Bonn. There has been no marked increase in the incidence of the condition in this region. There were probably a considerable number of patients who did not come for treatment. A statistical study of the material observed is presented in the form of a number of tables. A relatively small number of cases were brought in from other localities. It appears from a study of the disease that a predisposition must be present and also that there must be exposure before a new infection occurs.

Epidemiology of Favus in Germany—Favus is endemic in the eastern provinces and in the western part of Germany. In other regions only sporadic cases occur. In no portion of Germany is the condition so common as it is in the eastern European countries. *Achorion schoenleinii* is the most frequent causative agent of favus in Germany.

SEBOCYSTOMATOSIS J R PRAKKEN, *Dermat Ztschr* 66 215 (May) 1933

The patient, a man, aged 48, had multiple tumors scattered over the trunk for thirty-six years. Histologic examination by means of serial sections showed that the tumors were sebaceous cysts containing an oily, yellow substance. They were apparently due to hyperkeratosis developing in the follicular openings of the sebaceous glands.

TREATMENT OF NEUROSYPHILIS WITH HERPES VIRUS AND OF MALARIA WITH A NONSPECIFIC PROTEIN H HRUSZEK, *Dermat Ztschr* 66 230 (May) 1933

Naegeli and others believe that the spontaneous development of herpes simplex during fever therapy influences the course of treatment favorably. In treating two patients who had positive findings of the spinal fluid, the author used malaria reenforced with a nonspecific protein, in addition to inoculations with herpes virus. Both patients had a history of spontaneous herpes simplex. In both instances an improvement of the findings of the spinal fluid was demonstrated.

RADIATION THERAPY OF HIDRADENITIS AXILLARIS H MEYER-BULEY, *Dermat Ztschr* 66.235 (May) 1933

The author discusses the theoretical and practical considerations in the treatment of infections of the axillary sebaceous gland by means of roentgen rays. He used a filter of 3 mm of aluminum or 0.5 mm of copper and increased or decreased the dose in accordance with the degree of inflammatory reaction.

FOREIGN BODY PEPPERING OF THE SKIN AS AN INDUSTRIAL INJURY THEODERICH NIMPFER, *Dermat Ztschr* 66 313 (June) 1933

Four patients were seen with pepperering of the exposed portions of the skin with minute particles. They were employed at cleaning gas pipes and meters, they used compressed air to force out the various foreign bodies, such as rust, which had accumulated over a considerable period. A varying inflammatory reaction surrounded each particle which was lodged in the skin, and many of the particles were palpable as tiny spines. In one case a biopsy was performed, and the foreign bodies were seen to lie close to the surface as if placed there by tattooing.

LATENT SYPHILIS AND THE INOCULATION OF LYMPH GLANDS G CHATSCHATURJAN, *Dermat Ztschr* 66 315 (June) 1933

The first patient was a man, aged 36, who had been treated four years previously for early secondary syphilis. The blood and spinal fluid showed negative reactions to the Sachs-Georgi and Kahn tests. Three lymph nodes were excised and injected into the testicle of a rabbit. A syphilitic chancre occurred which contained many spirochetes.

The second patient was treated three years previously for early primary syphilis. The Wassermann test of the blood and spinal fluid had always been negative. Portions of the lymph nodes injected into rabbits failed to produce a lesion.

The author points out the value of transplants of the gland in determining the presence of latent syphilis.

ETIOLOGY OF ANGIOKERATOMA OF MIBELLI L J STEIN, *Dermat Ztschr* 66 320 (June) 1933

Two patients with angiokeratoma of Mibelli were observed, and their case histories are recited. One was a girl, aged 10 years, and the other a girl, aged 17 years. The patients had suffered from frost-bite and presented evidence of

poor circulation of the extremities as well as a family history of tuberculosis. The author reviews the various theories published as to the etiology of the condition and concludes that it is a disorder which occurs in certain tuberculous subjects who have an inherited predisposition to proliferation of the blood vessels and who are exposed to frost-bite. He does not consider it a true tuberculid.

ERYTHEMA NODOSUM EXULCERANS EMANUEL WOHLSTEIN, *Dermat Ztschr* 66 335 (June) 1933

An atypical case of erythema nodosum is described in which nodules occurred over the inner malleoli of the ankles, and in which ulceration developed. The unusual features were considered to be due to the mechanical damage to which lesions in this area are subjected.

TAUSSIG, San Francisco

NATURE OF THE TRANSVERSE MARK IN THE NAILS IN ARSENICAL POLYNEURITIS R WIGAND, *Deutsche Ztschr f d ges gerichtl Med* 20 207, 1933

In nonlethal cases of arsenic poisoning, about two months after the ingestion of the poison, all the finger-nails show a transverse, white-gray band, about 1 mm in width (Mees mark), which finding is of great diagnostic value. The band is somewhat similar to that observed in thallium poisoning, and contains ten times as much arsenic as the apparently normal parts of the same nail. The Mees mark represents a deposit of arsenic owing to impregnation of the nail substance.

E L MILOSLAVICH, Milwaukee [ARCH PATH]

SCLEDERMA AND ITS PATHOGENESIS HANS SELYE, *Virchows Arch f path Anat* 286 91, 1932

Before describing the clinical picture of scleroderma, the author gives a historical introduction to the disease which was already known to Hippocrates and Galen. This is important because it contains the recognition of sclerema neonatorum as a different entity. In the clinical picture there are three different stages: the edematous, the indurative and the atrophic. Pathologically, the increase in connective tissue is not confined to the skin but involves the blood vessels, muscles, bone marrow and, perhaps, more or less, all the organs of the body. In addition, depositions of calcium salts have been observed by numerous observers. There are at present many theories which attempt to explain the condition, such as the vascular, nervous, traumatic, infectious and rheumatic theories and those based on the influence of cold, hyperthyroidism and hypothyroidism and on suprarenal insufficiency.

Nursing rats, aged from 7 to 14 days, were given from 5 to 10 units of parathormone for from three to four days, a total of from 15 to 40 units. Twenty per cent of the animals suffered from typical scleroderma, whereas the rest did not show any signs of disease or remained backward in growth and died with more or less nonspecific signs of disease (for the most part pneumonia). Just as in the human being, three stages could be distinguished. On the day after the second injection, the skin of the neck and shoulder began to swell and was painful. The next day the edema had disappeared, and in its place a flat, indurated plate of hard skin which increased in size during the following days could be felt. The parts of the skin involved were symmetrical, soon the hair fell out, and ulcers appeared which healed with the formation of crusts. Then the skin became movable again and thin (atrophic stage). If the injections were given for only five days, the skin returned to normal after three weeks, and after two months the fur was that of a normal animal. The histologic picture, which seems to be similar to that of scleroderma in human beings, is illustrated by several histologic sections of the skin which frequently show deposition of lime salts in the necrotic

areas. Infiltration of the nerves and small vessels of the skin and muscles with small round cells was observed in further analogy to the disease in human beings. The author therefore concludes that the experimental disease is analogous to scleroderma in human beings. He realizes, however, that there may be other factors influencing the condition, since he could produce it in only 20 per cent of the animals. He wishes to classify scleroderma with osteitis fibrosa cystica and Albers-Schonberg disease, since all of them are apparently due to hyperfunction of the parathyroid glands. The possible practical importance of this point of view is considered. An extensive bibliography is given.

SCHOENTHAL, New York [AM J DIS CHILD]

INVESTIGATION OF PELLAGRA V. AROUTUNOV-LANTT, Dissert. Dermat-Venerol Clin, State M. Inst., Azerbaidjan, Bakou, 1933

This monograph is a study of 1,115 cases of pellagra collected during the epidemic in West Georgia, from 1929 to 1931, and of 52 cases which the author, as a member of the Red Crescent Expedition, discovered in Bakou in 1932.

In the group studied 62.9 per cent were women, 30.8 per cent, men, and 18 per cent, children, 2 of whom were breast-fed infants aged 5 and 6 months.

One hundred and sixty-six patients were carefully studied. The blood, feces and urine were examined in all cases, and in 21 the skin was studied by the use of the microscope.

Nearly all the patients suffered from ankylostomiasis. Definite mental changes were noted in 78 per cent of the cases.

In 70 per cent of the cases the initial symptoms were cutaneous lesions, in 22.2 per cent, severe diarrhea, in 1.2 per cent, mental disturbance.

The essential changes in the blood consisted of decreased hemoglobin, erythropenia, leukopenia and, in most instances, a decreased color index, under 1. In the majority of cases there were from 40 to 42 per cent lymphocytes, from 19 to 44.5 per cent neutrophils and from 6 to 30.5 per cent eosinophils. The blood platelets were diminished. The minimum osmotic resistance of the erythrocytes was decreased. The erythrocyte sedimentation test was accelerated in all instances.

Erythema of the skin occurred from the middle of March to the middle of September. It was followed by hyperkeratosis and desquamation, sometimes associated with vesicles and pustules. In some of the patients the changes in the skin recurred several times during that period. Usually the back of the hands and feet and the neck were involved. Often, however, the skin of covered parts was also affected, as the chest, thighs, abdomen, axillae and genitals, sometimes the whole body showed changes in the skin.

In the most cachectic patients the pigmentation and depigmentation of the skin remained after the dermatitis cleared up.

In some cases the microscope showed considerable proliferation of the epidermis. The amount of pigment in the basal layer was not proportionate to the degree of visible pigmentation. In fact, in many instances it was diminished when compared with other cases which showed clinically less pigmentation. Also the amount of pigment in the corium was not proportionate to the degree of clinical pigmentation. The author concludes, therefore, that pigmentation in pellagra does not depend on the increase of melanin in the skin but on the pigment in the corneous layer which is increased as a result of physicochemical changes. This assumption was confirmed by the fact that, the more marked the pigmentation, the more distinct was the hyperkeratosis noted.

In the cutis there were hyaline degeneration and atrophy of the elastic fibers, perivascular infiltration, hyaline degeneration of the vascular walls and edema of the cutis and subcutis.

A deficiency in total and free hydrochloric acid and a complete achylia of the gastric juice were noted

Following treatment with the administration of liver all the changes in the blood improved, except the osmotic resistance of the erythrocytes. The cutaneous lesions disappeared within from ten to twelve days.

The author regards deficiency in food as the cause of pellagra. Almost all of the patients had been eating spoiled maize which was gathered in an unripe state, was insufficiently dried and was stored in damp places. In such a food the vitamins are destroyed.

Other factors predisposing to pellagra are, according to the author, total exhaustion, addiction to alcohol, mental shocks and intestinal worms. All of the patients studied had intestinal worms, and almost all were addicted to alcohol.

The author is of the opinion that the sun rays are of secondary importance in producing erythema.

SPIROCHETE CONTENT OF THE BRAIN AND INTERNAL ORGANS OF SYPHILITIC RATS K. YASUMOTO, Lues. *Bull. Soc. japon. de syph.* 9:17 (Feb.) 1933

Rats were inoculated with 0.6 cc. of the testicular emulsion of syphilitic rabbits subcutaneously at the scrotum or intraperitoneally and were killed at various intervals (within from thirty to three hundred and fifty days) after inoculation. Then emulsions of their internal organs or of their blood were injected into the backs of normal rabbits cutaneously in a quantitative manner. Inoculation with brain emulsion was successful in 50 per cent of the rabbits, with spleen emulsion in 80 per cent, with liver emulsion in 60 per cent, with testicle emulsion in 50 per cent, and with kidney emulsion in 40 per cent. Inoculation with blood gave negative results.

SYPHILITIC KERATITIS IN RABBITS PRODUCED BY BULBAR SUBCONJUNCTIVAL INOCULATION WITH SPIROCHETES AND DISTRIBUTION OF THE SPIROCHETES IN THE TISSUE T. FUNABASHI, Lues. *Bull. Soc. japon. de syph.* 9:25 (Feb.) 1933

The upper or lower point of insertion of the rectus muscle near the limbus of the cornea was chosen as the site of inoculation. In thirteen rabbits which were inoculated at this point keratitis developed, which clinically closely resembled the keratitis produced by scarification or by injection into the anterior chamber. After an incubation period of from ten to twenty-seven days, rarely forty days, keratitis developed, the severity of which was apparently influenced by the season, for in summer a mild form usually developed. In the majority of rabbits granulomatous vegetation was also visible in the conjunctiva near the limbus of the cornea.

Ten rabbits which had been inoculated under the conjunctiva near the upper limbus of the cornea were observed during from eighty to ninety days, and then eighteen eyes were examined by dark-field illumination. During the incubation period no spirochetes were found. In the first stage of keratitis, spirochetes were found in the dull zone of the progressing ends of the capillaries in seven of fifteen rabbits. In the progressive stage, spirochetes were found in all the rabbits in greater numbers. They were particularly numerous in the dull zone which extended in tongue-like formation from the edge toward the pupillary region. At the height of the disease spirochetes were found in any place where proliferation of capillaries took place. In the mild form of keratitis, which was of short duration, spirochetes were found only during a brief period and only in the progressing dull zone in the region of the ends of the capillaries. Of the rabbits which were inoculated by subconjunctival injections under the lower limbus of the cornea, only ten eyes were examined, spirochetes were found either before or after the keratitis became manifest.

BLOOM, New York

Society Transactions

CHICAGO DERMATOLOGICAL SOCIETY

MAX S WIEN, M D, *Secretary*

Regular Meeting, March 15, 1933

OLIVER S ORMSBY, M D, *President, Presiding*

LICHEN PLANUS Presented by DR MARCUS R CARO (by invitation)

J G, a white man, aged 72, presents a generalized eruption of six months' duration. According to the history, which is not satisfactory, lesions appeared first on the back of the neck and rapidly spread to the face and scalp. Itching was severe at first and became worse after irradiation, following which the ears became involved and swollen and the lesions spread to the body. As the itching subsided, the spots became dark. For the past twenty years the patient has been taking large doses of potassium iodide daily each winter as a blood purifier. There is no history of syphilis. The blood count and urinalysis were normal, and the Wassermann reaction of the blood was negative.

Over the lumbar spine and on the flexor surface of the wrists are a few pinhead to slightly larger round, elevated, firm, violaceous-brown papules, some of which are flatter and darker. On the face, scalp, ears, neck, upper part of the chest, axillae, inguinal folds and thighs are many pea-sized, slightly depressed, dark brown macules which, according to the patient, are the end-results of the elevated papules. On the face, scalp, ears, neck and dorsa of the hands are many large comedones which, the patient says, were absent prior to the onset of the eruption. There are no lesions on the genitalia, but there are a few silvery striae on the buccal mucosa.

Histologic examination of a papule taken from the lumbar region showed acanthosis of the epidermis, thickening of the granular layer, an indistinct dermo-epidermal junction, and a papillary infiltrate of lymphocytes and large dark chromatophores sharply limited below, all consistent with the diagnosis of lichen planus.

LICHEN PLANUS Presented by DR J H MITCHELL

This boy, aged 3½ years, was demonstrated two months ago as having lichen planus. The diagnosis was questioned by some of the members, and the suggestion was made that the condition might be due to a fungus infection. The patient is now demonstrated as presenting typical lichen planus undergoing rapid involution with characteristic brown macular relics following the internal administration of sodium thiosulphate.

DISCUSSION

DR F E SENEAR. I think that the first case was extremely interesting for several reasons. (1) The location of the lichen planus was unusual. Of course, we should expect the involvement of the wrists and the buccal mucosa, but the marked involvement of the neck and face coincides with some of the cases with unusual distribution which we have shown here, I think. Howard Fox recently wrote on lichen planus in unusual locations. As I have said before, several years ago we showed a case which was disputed largely because the eruption was almost all about the eyes and ears. (2) This patient had lesions of the spiny type or lichen planus pilaris. (3) The patient had an extensive eruption of comedones. I do

not recall having seen the eruption of comedones as an accompaniment of lichen planus, and I doubt whether any relation exists between the two, but if we accept the history of the lesions on the face as being of the same nature as the others, we have another case of lichen planus with atrophy, the second case of this type which has been shown here recently. Another interesting thing was the pigmentation developing in the tissue. Several years ago we had a patient who had been treated for syphilis when in reality he had lichen planus, and it was a question whether the intense pigmentation that was present was not due to the arsenical therapy.

DR RUBEN NOMLAND About four years ago we saw a patient with lichen planus and hyperkeratosis about the hair follicles that was analogous to the first case shown here. We considered it a case of lichen planus pilaris.

DR MARCUS R CARO The history is rather vague. The patient stated that he had not noticed any comedones prior to the onset of the eruption, but even now he did not know that he had them until they were expressed. As to the pigmentation, it could not be due to medication because, except for potassium iodide, there was no ingestion of drugs.

CUTIS VERTICIS GYRATA AND ACROMEGALY Presented by DR E A OLIVER

S K, a white man, aged 48, was admitted to the United States Veterans' Hospital on Feb 3, 1933, for the treatment of acromegaly. He stated that for the past ten to fifteen years he had noticed a gradual enlargement of the extremities and of the facies. At the same time he had observed the appearance of large wrinkles or furrows on the forehead and scalp and a thickening of the lips and eyelids.

Examination revealed the clinical characteristics of acromegaly. In addition, the patient presented a markedly furrowed skin over the scalp and on the regions of the neck and forehead. The furrows were so numerous and deep that they resembled the sulci of the brain. The skin was freely movable over the underlying tissue, and it hung in folds over the occipital region.

Roentgenographic examination of the skull revealed the sella turcica to be of normal size, shape and depth. The bones of the skull were thickened.

The Wassermann and the Kahn tests were negative. The basal metabolic rates were found to be +46.8 per cent, +48.6 per cent, +53.1 per cent and +43.1 per cent.

The patient is married and has five normal, apparently healthy children.

DISCUSSION

DR F E SENEAR Dr Alderson's recent report of cutis verticis gyrata following an inflammatory condition discussed the infective character of this disorder but did not mention the endocrine factor. We demonstrated at the school the patient shown by Dr Foerster and Dr Wieder about two years ago, and one of the men called our attention to the fact that Cushing's textbook discussed a case closely resembling the condition of that patient, and that the association of acromegaly and cutis verticis gyrata had been recognized by him for some years.

DR RUBEN NOMLAND In the bulletin of the French Society there is a recent report of three cases of cutis verticis gyrata and acromegaly (Adrian, Charles. *Sur la morphogenese de la pachydermie occipitale vorticillee* ["cutis verticis gyrata," cuir chevelu encephaloide]. Ses rapports avec l'acromegalie, *Bull Soc franç de dermat et syph* [Reunion dermat, Strasbourg] 39 1485 [Dec] 1932).

DR E A OLIVER I have been much interested in this disorder since I reported a case in the ARCHIVES in July, 1922. At that time Alderson reported 2 cases before the American Dermatological Association. Prior to that only 1 case, one by Wise and Levin, had been reported in the American literature.

The first case was described by Jadassohn in 1906. Since that time approximately 150 cases have been reported, so it is not a rare condition.

There has been a great diversity of opinion regarding the etiology of this disease. Many cases have been thought to be due to preceding inflammatory diseases, some cases undoubtedly consist of nevi. Some are due to congenital hypertrophies of the connective tissue of the scalp, while a fourth group consists of changes in the scalp, produced by such diseases as acromegaly, myxedema and leukemia.

This case is similar in many ways to the case shown before this society by Dr Wieder, and undoubtedly it belongs in the group of cases in which proliferation of the tissues of the scalp has occurred in association with acromegaly.

According to Fischer's classification, this condition should be regarded as 'an acute inflammatory condition of the scalp in the form of cutis verticis gyrata' rather than as a true cutis verticis gyrata. True cutis verticis gyrata, according to Fischer, is a congenital anomaly and represents a reversion to a lower form of life.

LICHEN OBTUSUS CORNEUS Presented by DR L. A. OLIVER and DR RUBEN NORDLAND

A man aged 47, has an itching disorder of the legs of about four years' duration. Each lesion started as a "pimple" which itched intensely and slowly enlarged. Previously lesions had appeared on the back of the neck.

Indiscriminately scattered over the front and calves of both legs are several dozen lesions all of which are essentially identical. Each lesion is round or oval and about 1.5 cm. in its largest diameter. They are definitely elevated above the surface and quite sharply bordered. Most of them are dry and slightly scaling, but many present a moist, eroded surface. On the back of the neck and extending into the scalp are many indistinct excoriated lesions.

A lesion on the leg was removed for microscopic examination.

DISCUSSION

DR WILLIAM ALLEN PUSEY: I am not sure whether this is a case of prurigo nodularis. It seems to me that there is a possibility. In the first place, the patient has areas of dermatitis in several places, he has the area on the neck, and I think it quite possible that he has had lesions or infection on the legs. The lesions are verrucous on top and are not so much covered with epidermis as lesions of prurigo nodularis are as a rule. I think that it is a case of vegetating dermatitis, a dermatitis from pus infection that produces vegetations. Perhaps I am more inclined to make that diagnosis today because we have at the office a boy who two weeks ago had a frank, dirty dermatitis and who now has dirty vegetating lesions on the face and scalp which are not unlike the ones in this case. I think that it is a vegetating dermatitis resulting from an indolent infection.

DR M. H. EBERT: In this instance the title of lichen obtusus corneus is intended to be synonymous with prurigo nodularis. I noticed one anomalous fact, namely, the presence of areas of lichenification between the nodules. This does not occur in prurigo nodularis.

DR OLIVER S. ORMSBY: On account of the work of Pautrier on lichenification, and particularly because he included prurigo nodularis in this group, I have been interested in this subject. The disorder that was originally described by Brocq as lichen obtusus corneus was first described in this country by White under the title used by Brocq. Several years previously, Hardaway described the case of a patient who had multiple tumors of the skin with itching, and later Schamberg and Hirschler described a similar condition occurring in the Negro race. Still later, Hyde recorded the case of a patient with lesions which he considered identical with the cases discussed by Hardaway and Schamberg and Hirschler, under the title of prurigo nodularis. Shortly afterward, Zeisler also recorded a similar case under the title given by Hyde and included, among other diseases, lichen obtusus corneus in the group.

Subsequent observations point to a probability that lichen obtusus corneus and prurigo nodularis are identical conditions. In this condition the lesions are rather large, warty or keratotic, discrete, intensely itchy nodules situated chiefly on the extremities. The lesions are persistent, they rarely, if ever, disappear. In a number of instances a new lesion has developed in the area from which one has been removed for a microscopic examination. The skin between the nodules is normal, and the itching apparently is limited to the lesions. These points make it difficult to consider the condition as merely a secondary lichenification.

In his enlarged conception of lichenification Pautrier includes prurigo nodularis as the nodular form of lichenification. In addition, he describes two other forms, a verrucous and a giant lichenification. In the group of verrucous lichenification he includes lichen corneus hypertrophicus (lichen planus hypertrophicus). In the examination of seventeen cases of this type, he found less than half with associated lichen planus lesions or lichen planus histology.

Under the term giant lichenification, Pautrier includes those cases which present plaques and tumor-like lesions associated with itching, crusting and, often, vesiculation, together with patches of mosaic lichenification usually situated in the genital region. Occasionally mycosis fungoides or syphilis is simulated. The plaques are essentially hypertrophic lesions following an itching dermatosis. The histology in the cases he describes was similar to that found in verrucous lichenification not associated with lichen planus.

In conclusion, the identity of prurigo nodularis and lichen obtusus corneus seems confirmed, but these conditions are not related to a variant of lichen planus. The condition appears to be a disease sui generis, and it seems to have a pathogenesis deeper than trauma.

DR WILLIAM ALLEN PUSEY. I believe there is no reason for confusing hypertrophic lichen planus with prurigo nodularis. I think that in this patient a secondary lichenification may account for the nodularis. The lesions were confined to the legs, they were quite large inflammatory lesions with a raw surface on top, and the case did not coincide with my conception of prurigo nodularis.

PRURIGO NODULARIS. Presented by DR RUBEN NOMLAND and DR RALPH SCULL

A Negro, aged 63, states that his cutaneous disorder began two years ago as a nodulopapular eruption, accompanied by pruritus. It progressed insidiously and involved the upper and lower extremities. The color of the lesions was not noted. He was first seen by us in July, 1932, since then there has been very little change in the condition.

The eruption is limited to the extremities. The lesions consist of hard, conical nodules which vary from 1 to 2 cm in diameter. The lesions are discrete and occasionally excoriated.

Examination of the blood and urine gave negative results.

DISCUSSION

DR WILLIAM ALLEN PUSEY. This case resembled prurigo nodularis and is a good illustration of that disease as a contrast to the previous case.

DERMATITIS HERPETIFORMIS (TREATED WITH HEAT THERAPY). Presented by DR CLEVELAND J WHITE and DR JOHN S COULTER

A Mexican, aged 48, has a grouped, symmetrical, papular and papulovesicular eruption of about two years' duration. When first seen at Dr Stillians' clinic about a year ago, the usual therapy, consisting of roentgenotherapy, treatment with arsenic and other treatment, was instituted. No improvement was evident after six months' treatment, and, as the pruritus had become almost intolerable the patient was given six successive weekly hyperpyrexia treatments with Dr Coulter's apparatus. This apparatus consists of sixteen 60 watt electric lights. The patient's temperature was raised to 104 F and kept at that level for four hours. Improvement was indicated after the second treatment and has continued for three months.

DISCUSSION

DR WILLIAM ALLEN PUSEY How was the treatment carried out?

DR CLEVELAND J WHITE Dr Coulter has a closed framework containing sixteen lights and the temperature can be lowered at any time by shutting off lights. This patient's temperature was raised to 104 F, and was maintained at that level for four hours. The treatment was continued over a period of six weeks, with one treatment a week. The patient felt a little weak after the first treatment, but the results were so strikingly evident that he was satisfied to continue. Before we started the treatment he appeared completely tired out all the time, but after the second treatment with light rays he began to improve markedly.

DR J H MITCHELL I should like to ask whether this might not be merely a remission. The man still has grouped lesions that appear active to me, and I wonder whether the improvement can be ascribed to the treatment.

DR L F WEBER This morning we saw a patient with dermatitis herpetiformis who ten days ago had an acute attack. I gave him one injection of a bismuth preparation, and the eruption has cleared up markedly. One might think that medication with bismuth would cure him, but he will probably have another attack in a few weeks.

DR WILLIAM ALLEN PUSEY The condition appears to present a picture typical of dermatitis herpetiformis now. Any treatment that will give relief in this condition is worth discussing.

DR THEODORE CORNBLIT I have been studying the blood chemistry of patients while they were undergoing heat therapy. We have a sweat bath in which we place these patients, perhaps somewhat similar to the one described by Dr White. I have noticed that there is a marked change in the blood chemistry of patients subjected to that treatment. Subjectively they feel much better. One striking thing we have noticed is that in chronic urticaria the itching decreases, and I wonder whether Dr White's case is a coincidence, whether my cases present near coincidences or whether it is possible to change the fundamental chemistry of the skin so as to reduce the pruritus element.

DR WILLIAM ALLEN PUSEY Was the patient constantly in a heavy sweat, in spite of the fact that his temperature was 104 F?

DR CLEVELAND J WHITE Yes, for four hours the temperature was kept at 104 F. This patient was presented to show what happened with hyperpyrexia treatments in one case. The patient did not improve under other methods, but he did improve greatly under heat therapy. There are still a few areas of mild active eruption.

TELANGIECTASIA DUE TO ROENTGEN THERAPY, FIBROSIS OF THE CHEST AND POSSIBLE MALIGNANCY OF THE RIGHT MAMMARY GLAND Presented by
DR J H MITCHELL

A woman, aged 37, was treated ten years ago for hyperthyroidism. No change in the skin occurred over the region of the thyroid, but within three or four years fibrosis and telangiectasia developed over the right side of the chest. There has been no increase in the size of the area, but there has been a steady increase in the fibrosis of the mammary gland. Recently the patient has been told that she has a sarcoma of the gland, and that immediate amputation is indicated.

The area extends from the base of the neck to and including the upper quadrant of the right mammary gland, and from the left margin of the sternum nearly to the anterior border of the right axilla. In the upper quadrant of the breast there is a dense hard mass of fibrosis which extends beyond the line of telangiectasia but which has the same contour. Characteristic telangiectasia is present throughout the area. During the past two years the patient has been treated by her physician from time to time with carbon dioxide snow, and she is of the opinion that this snow treatment has caused the condition in the breast.

DISCUSSION

DR WILLIAM ALLEN PUSEY I have never seen a mass of that thickness and size under a scar following roentgen therapy, though I have seen a great many scars in approximately that location, many of them following treatment of the thyroid. I cannot be satisfied with a belief that this is a fibrous mass, the whole feel of it and the outline make me think that it is a massive carcinoma. It has the feel of carcinoma. I should be surprised if an incision of the lesion does not reveal carcinoma. I am at a loss to know how to connect that mass with a scar following roentgen therapy, and I am also at a loss to call it a simple primary carcinoma beginning in the breast. It has started higher than where carcinomas usually appear, and it extends beyond the breast tissue.

DR OLIVER S ORMSBY The history is interesting. The roentgen therapy was given about five years ago, and the telangiectasia appeared some time later and has gradually increased up to the present time. Like Dr Pusey, I have not seen a similar case. I have repeatedly seen scleroderma-like thickening, but never to the amount or depth that is present in this case. It is possible that the looseness of the tissue about the breast is a factor in the development of this unusual fibrosis. In view of the slow development of the process and its connection with the scar, the prognosis of its being a benign fibrosis rather than a malignant growth is favorable.

DR J H MITCHELL I should like to have the opinions of some of the members, for the situation is rather difficult for all concerned. The patient had no treatment except carbon dioxide snow therapy. She is inclined to charge the physician with having produced this lesion with the carbon dioxide snow.

DR WILLIAM ALLEN PUSEY Is it possible to obtain a piece of the tissue?

DR J H MITCHELL I think that amputation is going to be performed soon. I saw the patient only once before. I suppose the growth could be a result of roentgen therapy, produced by treating the thyroid with the tube too close to the breast, without any protection. The process began less than six years ago. There was a gradual onset, and the fibrosis in the breast is not of as long duration as the other phases of the process. The difficulty is the statement made by a roentgenologist last week that the patient has a malignant sarcoma and that immediate amputation is indicated. The sarcomatous change also is charged to the physician, if we could say that the growth is sarcoma we could exonerate him. I find in damage suits that if the physician has not seen the patient within two years, that automatically releases him by the statute of limitations. However, if he has looked at the lesion or treated it in any way, the statute of limitations runs for two years from that time. He had not treated the patient for four years, but during the last two years he has treated her with carbon dioxide snow from time to time. I should like to know your opinion about a biopsy.

DR OLIVER S ORMSBY I should recommend it. If the growth proves to be sarcomatous or carcinomatous, it could be removed before there is any chance of metastatic involvement.

DR J H MITCHELL I think that would be best. The patient has no glands in the axilla now. The telangiectasia extends a little to the right, but the irradiation was in this direction. I have a case in a woman who was treated on the abdomen. Both sides were treated, on one side the machine was set for filtration, and the filter was left out. This patient had a much deeper and, I think, a firmer mass than is present in this woman's breast.

NOTE—Two biopsy specimens were taken with the skin punch. The fibrotic skin was thick and firm. After puncture the breast seemed to be almost hollow, and no tissue could be secured. A section of this skin was entirely free from any suggestion of malignancy. Dr Selim McArthur then made a long incision, confirming the lack of connection of the breast tissue with the integument. The breast tissue was soft and could be readily scooped out with the gloved fingers. Section of the breast tissue disclosed carcinoma, and the entire breast was amputated.

REPORT ON CASE PREVIOUSLY PRESENTED Presented by DR A W STILLIANS

A biopsy specimen removed from a papule on the thumb of the patient with tularemia presented at the January, 1933 meeting was shown

The epidermis was decidedly acanthotic, the papillary layer was edematous and was infiltrated with round cells and a very few polymorphonuclears. Deeper in the corium was a tuberculoid infiltrate, the center of which was composed of epithelioid cells; the protoplasm was vacuolated and poorly stained. About this central infiltrate was a zone of dense round cell infiltrate. The blood vessels were moderately dilated.

MAX S WILN, M D, *Secretary*

Regular Meeting, April 19, 1933

OLIVER S ORMSBY, M D, *President, Presiding*

ALEUKEMIC LYMPHADENOSIS CUTIS Presented by DR H E MICHELSON

Mrs Z, aged 54, whose past history revealed nothing of importance, states that in June, 1931, a rather soft, sharply circumscribed, yellowish plaque developed on the bridge of the nose. Gradually similar areas appeared over the face, so that by January, 1932, she had ten or twelve of these areas, and a few flatter, but similar lesions over the chest.

There are about thirty sharply circumscribed nodes scattered over the forehead, ears and face, with one plaque measuring 2 by 3.5 cm on the right cheek. The skin over the areas is somewhat edematous, but there is no ulceration or crust formation. The nodes are translucent in appearance, soft to palpation and yellowish pink. The general examination, including careful roentgenographic studies of the chest, revealed no pathologic changes.

Several blood counts have been made, and the leukocyte count varied from 9,300 to 15,300. No immature cells were found, and the diagnosis of leukemia could not be established from the examination of the blood.

The microscopic section shows a practically normal epidermis, there is a narrow free zone immediately under the epidermis, and below this, a marked infiltrate, which is not densely packed, reaches deep into the cutis and is composed of rather large cells with deeply stained nuclei. No other types of cells are seen, and the diagnosis of leukemia cutis is made from the examination of the histologic section.

In view of the normal blood picture, the patient is thought to be in the aleukemic stage.

DISCUSSION

DR F E SENEAR I believe that this is a very instructive case because with the eruption on the face, as we see it alone, I think the first thought would be that of lupus erythematosus. As we study some of the small lesions, particularly those in the region of the chest and under the diascop, I think we obtain a distinct clue that some other condition is present. Perhaps the association of lesions on the body would at first have led us to think of something other than lupus erythematosus. In view of the biopsy specimen shown today, I think that there is no question as to the diagnosis of leukemia cutis of the aleukemic type.

DR FRED R SCHMIDT Some years ago Dr Senear and I saw a physician who showed changes of lupus erythematosus of the skin with blood and biopsy findings of leukemia. Five years ago this man had lesions similar to the ones now shown. I saw him a year ago, and he still had the lesions, but there was no apparent extension of the process. Clinically, the diagnosis has remained lupus erythematosus.

DR O H FOERSTER It seems to me that from the cutaneous aspect alone it would be venturesome to make a diagnosis in this unique case. Erythematous lupus, as Dr Senear pointed out, is what most of us probably had in mind. In addition, the lesion on the right cheek impressed me as one to be differentiated from the angiolupoid of Pautrier to which I think it bears a close resemblance.

DR PAUL A O'LEARY From the lesions on the face I was more impressed with the possibility of a diagnosis of mycosis fungoides than of lupus erythematosus. The frequency with which the infiltrative plaques may involve the eyelids in the early stage of mycosis fungoides is worthy of comment in view of the fact that this patient presents such a lesion on the left eyelid. I do not believe that any of us, with our limited opportunity for study of this case, can dispute Dr Michelson's diagnosis, but to me the case presents a commentary on the value of the term lymphoblastoma, and I will hazard the forecast that despite the present pathologic picture the final diagnosis will be Hodgkin's disease.

DR H. E. MICHELSON This case has been most difficult to diagnose, and perhaps the final decision has not been reached as yet. I heartily agree with the opinion that on first view lupus erythematosus would seem the most likely diagnosis, but on careful analysis one would note the elevated, yellowish, soft, velvety lesions. There are similar lesions on the trunk. The patient was taking large amounts of a proprietary phenolphthalein laxative, and at first I thought that that had some bearing on the eruption. We also treated her with gold and bismuth preparations for more than a month, with no result. The biopsy, I think, conclusively indicates the diagnosis of lymphadenosis cutis. The blood smear has one or two cells suggestive of leukemia in the field. I think that in the past few years, since we have been discussing the lymphoblastomas as a group, we have been thinking of generalized eruptions, but we must not forget that many bizarre and unique lesions may be the initial ones of leukemia.

A CASE FOR DIAGNOSIS Presented by DR J H MITCHELL

A widow, aged 38, in excellent general health, presents cutaneous lesions of four years' duration. On the right mammary gland and extending more than a hand's breadth below are three contiguous areas of lesions with normal skin between. Another area is seen to the left of the sacrum.

When the patient was first seen in November, 1932, she had severe and extensive dermatitis venenata about the entire trunk, due to irritants applied for the treatment of these areas. The dermatitis responded very slowly to soothing applications and to radiotherapy. Repeated exacerbations of the dermatitis occurred, they were thought to be due to rayon and other garments. There have been occasional attacks of folliculitis and patchy dermatitis on various parts of the body. There is no adenopathy.

On April 17, 1933, the blood count was as follows: leukocytes, 9,200, polymorphonuclears, 71 per cent, lymphocytes, 24 per cent, eosinophils, 4 per cent, basophils, 1 per cent, and many platelets.

Biopsy disclosed a dense round cell infiltrate immediately beneath the epidermis and apparently involving the epidermis at some points. The lower margin of the infiltrate was an extremely sharp line. All of the vessels in the corium were surrounded by similar infiltrate. In the section available there was no atrophy of the epidermis.

DISCUSSION

DR H R FOERSTER I consider this a rather difficult case to discuss. The reticular pigmentation, atrophy and telangiectasia are poikiloderma-like features, as Dr Mitchell has stated. I believe, however, that poikiloderma atrophicum vasculare is a hazardous diagnosis to make in a process that is so localized, in view of the limited knowledge we have of that disease. The histologic examination does not suggest poikiloderma to me because of the pronounced round cell infiltrate of the papillary layer, with a sharply defined lower margin, as in lichen planus, but the compression of the collagen bundles and the displacement of blood

vessels are features that would fit in with a diagnosis of poikiloderma. This case brings to mind cases shown in the past which presented features of both lichen planus, sclerosis et atrophicans and poikiloderma, yet lacked distinctive characteristics of either. If this proves to be poikiloderma, we may consider ourselves fortunate in seeing a case so early in its development.

DR M H EBERT: When I first looked at the case at some distance, the marmoration suggested that it might be the type of pigmentation that follows the application of heat and other local irritants, but on closer investigation I found that most of the pigmentation disappeared under the diascop. I should rather hesitate to make a diagnosis of poikiloderma.

DR O H FOERSTER: I think that a diagnosis of erythrodermia of the large plaque type of Brocq should be considered. The woman has a moderately ichthyotic type of skin, and the scale is exaggerated in consequence. A number of macular lesions are scattered here and there which may have some connection with the large patches on the trunk. I think that this disorder should be given consideration in diagnosis.

DR CLARK W FINNERUD: I saw only the section and I merely wish to remark that we have seen cases of what we considered poikiloderma which showed histologically as marked an inflammatory reaction as is present in this one. I do not think that poikiloderma can be ruled out entirely from the sections shown.

DR J H MITCHELL: The case is of four years' duration. The lesions Dr Finnerud spoke of are small, transient areas of dermatitis, they are of no particular importance according to my observations. I first considered a diagnosis of mycosis fungoides, but the absence of pruritus and the lack of response to radiotherapy caused me to abandon that opinion. The patient had a continuous leukocytosis of about 9,000 and an eosinophilia of 4 per cent. When the first severe dermatitis subsided, I began to think of Brocq's disease but the condition does not seem to be of that character. That disorder shows no sharp cellular infiltrate such as we have here. I shall try to get some more material from different areas for study, as I think it would be advisable to do so.

A CASE FOR DIAGNOSIS (SARCOID?) Presented by DR MARCUS R CARO (by invitation)

Mr F K, a white man, aged 42, first noticed a reddish discoloration on the chin and lower lip about a year ago. Pruritus was present only at the outset. The patches were pale at times but became definitely worse after perspiring and shaving. The findings of the general examination were negative.

The results of the blood count and urinalysis and the Wassermann test of the blood were also negative.

Examination showed two reddish, fairly well defined, elevated and slightly infiltrated lesions. The one on the chin was round and dollar-sized and was separated by a narrow ridge of normal skin from the upper lesion, which was ovoid and extended to the vermilion border of the lower lip. The lesions were covered by intact skin which showed no scale and no follicular involvement, but in which were present many telangiectatic vessels. Telangiectases were also present on the nose and cheeks.

DISCUSSION

DR RUBEN NOMLAND: I think that there is some inflammatory element present, and a diagnosis of sarcoid is first in my opinion. We cannot decide more definitely than that without a biopsy.

DR H R FOERSTER: I should like to know more about the lesions this man had on the scalp. There is extensive scarring which I thought might have been caused by lupus erythematosus as the lesion on the chin resembles the telangiectatic type of lupus erythematosus.

DR MARCUS R CARO: The patient could not give me much information about the history of the condition on the scalp. When he was about 8 years old,

he had some lesions on the scalp which cleared up at that time and did not recur. He was free from cutaneous lesions until about a year and a half ago, when the condition on the chin appeared. Sarcoid was my first provisional diagnosis, but the patient has shown no improvement following ten weekly doses of one-fourth skin unit of roentgen rays and the administration of a solution of potassium arsenite during the same period of time.

DR H E MICHELSON I thought of a rhinophymatous type of involvement of the chin. You will recall the case reported recently from Dr Wile's clinic.

DR CLARK W FINNERUD My impression was that biopsy might decide the question. On looking at the lesion I thought that it might be an unusually deep-seated eruption of the lupus pernio type.

DR MARCUS R CARO I shall attempt to have a biopsy made and shall report later.

SARCOMA, PIGMENTED (NEUROGENIC) Presented by DR E P ZEISLER

A woman, aged 37, has a hazelnut-sized tumor of the left deltoid region which she says has been present for one year.

The lesion is firm, nodular, partially pigmented and fixed with the epidermis. A similar dark pigmented mole is seen lower down on the upper arm, and several small dark moles have recently appeared on the body.

DISCUSSION

DR H E MICHELSON This patient presents the often recurring problem: What shall we do with moles? The problem is especially difficult when we are alarmed about their being or becoming malignant. In the case of this particular patient it seems to me that the mole on the arm is already malignant, the tissue is bound down, there is marked infiltration beyond the borders of the mole, and the tissue is very hard. I do not think that the other moles are metastatic. Wide excision with fascial removal and subsequent roentgenotherapy is, I believe, the only hope.

DR CLARK W FINNERUD I presume that this is a lesion of the type Dr Michelson has described, but to me it would not be surprising if on excision we found it to be a hard fibroma. I have seen one lesion similar to this one in color and size, which dimpled the skin as this one does. I do not know whether it had the little processes radiating from it, but I should not be surprised if this lesion proves to be benign.

DR E P ZEISLER I recently excised a lesion on the leg that was identical with this one, a brown pigmented lesion, which I thought was a neurofibroma, but the pathologic report showed it to be a sarcoma, and about a month later the patient had a recurrence locally. I do not think that this is the type of lesion we classify as a malignant melanoma, I rather believe that it is a neurogenic sarcoma with pigmentation. These lesions are highly radioresistant, and the only hope is wide excision.

A CASE FOR DIAGNOSIS (SCHAMBERG'S DISEASE?) Presented by DR F E SENEAR and DR MARCUS R CARO

B McC, a white girl, aged 14, had scarlet fever about ten months ago. Soon after the desquamation ceased, a generalized eruption similar to the present one developed, which at that time involved also the face, and which disappeared spontaneously in about two weeks. Four months ago the present eruption was first noticed on the left leg, and it gradually spread to involve both the lower and the upper extremities. There has never been any pruritus or other subjective symptoms. During the month since the patient first came under observation there has been definite fading of the lesions.

The eruption consists of circinate patches varying in size from that of a pea to that of a palm on the anterior surface of the legs, on the thighs, buttocks and sacral region and on the extensor surface of the forearms. In each patch there is a definite but irregular reddish border which contains fine telangiectases and purpuric macules varying in size from that of a pinpoint to that of a pinhead, while the center shows clearing but no atrophy.

Biopsy revealed a thin non-nucleated scale, a moderate degree of acanthosis and slight intracellular edema of the epidermis, a discontinuous granular layer and an intact basal layer. The corium was edematous and showed dilatation of the superficial blood vessels and perivascular edematous mantles of round cell infiltration, with slight hemorrhage. The sweat glands and the deeper part of the corium were normal. No hemosiderin granules were found. The histologic changes lacked the pigment granules of Schamberg's disease and the marked epidermal changes of purpura annularis telangiectodes, they lacked the typical endarteritis and changes in the sweat glands and deep vessels.

DISCUSSION

DR H E MICHELSON I think that this eruption closely resembles the one that Dr Zeisler showed recently, and also two cases of my own which had similar eruptions. I think I mentioned that Gougerot had reported a condition which was similar to Schamberg's disease, only it was made up of minute papules, and there was a general distribution. He called the condition purpuric pigmentary lichenoid dermatitis. Until further studies are made and Gougerot's report is evaluated, I feel quite satisfied with the term, for I cannot conceive of Schamberg's disease in the sense of a generalized eruption.

DR E P ZEISLER Dr Michelson was so kind as to send me a translation of Gougerot's article, but I must say that the points of differentiation between the two conditions were beyond my comprehension. I should be inclined to classify this case as a generalized or disseminated case of Schamberg's disease.

DR J H MITCHELL In connection with this case I should like to ask if any one has seen pityriasis rosea with purpuric lesions persisting after involution of the original lesion. During the winter I had a patient who had pityriasis rosea with lesions that remained purpuric long after the pityriasis rosea cleared up. It occurred to me that if such a thing could take place in a definite case of pityriasis rosea under close observation, perhaps it was possible for this case to have begun in that way.

DR MARCUS R CARO It is difficult to fit this case into any of the three conditions ordinarily considered because it lacks some of the findings characteristic of each of them. The picture resembled purpura annularis telangiectodes, but there was not the deep infiltration, and the changes in the sweat glands were also absent.

POIKILODERMA ATROPHICANS VASCULARE Presented by DR MINNIE O PERLSTEIN (by invitation)

Mrs L S, a Jewess, aged 45, presents a slowly progressive eruption of about six years' duration, which is entirely asymptomatic.

The eruption consists of generalized, roughly symmetrical, round plaques, varying in size from that of a palm to that of a plate, which involve the entire trunk and the buttocks, thighs and arms, with smaller scattered lesions on the forearms, during the past two months the face has become involved. The involved areas consist of reticular atrophy and telangiectasia and resemble radiodermatitis. The color varies from red to violet and brown. Moderate scaling is present. On two occasions during the past two months vesicles have been observed on some of the lesions. Very little treatment has been administered.

The patient's general condition has been unusually good. At the present time she is in the menopause, with occasional flushing, headache and nervousness, and during the past month she has complained of pains in various muscles of the arms and legs. Physical examination gave essentially negative findings.

Blood counts, serologic examinations and the blood chemistry were negative, and the basal metabolic tests were within normal limits

A biopsy specimen, taken from an infiltrated lesion on the back, showed atrophy of the epidermis and slight edema. The upper part of the corium was edematous and showed loose mantles of round cells about the vessels, with occasional chromatophores in the papillary layer. The collagen fibers stained poorly in the upper part, and the elastic fibers were fragmented.

In an atrophic lesion similar but more pronounced changes were seen. The basal layer was broken in places by the infiltrate, and the elastic fibers were almost entirely absent in parts of the papillary layer.

DISCUSSION

DR O H FOERSTER At first glance I thought that the condition resembled about as closely as possible the typical cases of *poikiloderma atrophicans vasculare* that have been described thus far in the literature. After as close an examination of the cutaneous lesions as was possible in a short time, I concluded that a diagnosis of *poikiloderma* should be made with reservations. This decision I base particularly on the arcual character of the superficial infiltrates on the back and on the arm, which are of the type that one associates with *mycosis fungoides*. I regard this disorder as one that frequently simulates other conditions at some time in its course. Although I think many of the features of *poikiloderma* are present in this case, I hesitate to put that down as a final diagnosis.

DR M H EBERT I believe that Dr Foerster's observation in regard to the presence of the infiltrate on the back is pertinent. A case of Dr Ormsby's that has been under observation for some time in the office closely resembles the case shown, but the majority of the lesions are of the large infiltrative variety suggesting *mycosis fungoides* with the arciform arrangement and with the other features, including the pruritus. I think that *mycosis fungoides* should be borne in mind in this case, although the histology was not typical of that disorder.

DR F E SENEAR I believe, as Dr Foerster does, that if we take certain of the lesions, particularly the original lesion and isolate them, the condition certainly resembles *poikiloderma atrophicans vasculare*. The other changes, however, which apparently precede that, when seen alone, make one think of *mycosis fungoides*. The patient had on one side of the abdominal wall a lesion with a clearing in the center that was distinctly whiter than the rest. The patient recently shown by Dr Oliver had a clearing in the center of the lesion with a vegetating growth about it. It seems to me that since the first case of *poikiloderma* was shown here, I think by Dr Zeisler, all we have seen have been *poikiloderma*-like changes in association with other disorders. This patient had, as Dr O'Leary suggested when examining her, an idiopathic atrophy. Whether the atrophic areas are all associated with these scaling patches or not I cannot say. Since we have seen so many *poikiloderma*-like lesions resulting from preceding inflammatory eruptions, I begin to feel uncertain as to *poikiloderma* as an entity.

DR PAUL A O'LEARY I have the same concept of *poikiloderma* as that expressed by Dr Senear. To me it is analogous to hepatic cirrhosis, which is the end-result of the effect of a variety of agents damaging to the liver. The cutaneous picture we call *poikiloderma* might well be the end-result of repeated insults from various factors, some of which may be infectious agents. The possibility of *mycosis fungoides* must also be borne in mind in this case, particularly because of the infiltrated plaques which are present. A year ago Dr Otto Foerster called the attention of this Society to the association of *poikiloderma* and *mycosis fungoides* when he discussed a case of *poikiloderma* which Dr Montgomery and I presented here.

DR FRED R SCHMIDT To substantiate what has been said, I wish to refer to the infiltration under the skin. In Vienna I saw a case reported by Fuhe of dermatomyositis in which the infiltrations under the skin were similar to the case

now discussed I remember that at the time he said that these poikiloderma-like lesions of the skin are merely lesions that one sees in connection with other processes going on under the skin

DR O H FOERSTER The pains in the muscles and joints mentioned by Dr Perlstein should be particularly borne in mind They are probably also part of the picture

DR OLIVER S ORMSBY In the early history of poikiloderma, Civatte reported a group of cases which later were entirely isolated from the Jacoby type, so the disease is being restricted Furthermore, Civatte's poikiloderma has been recently declared by Civatte himself to be identical with Riehl's melanosis, as described during the World War, so it is not a new entity The theory of an endocrine cause of Civatte's poikiloderma therefore is eliminated as a factor in poikiloderma as now recognized I think that Dr Schmidt's remarks are of value because those cases of infiltration must be considered The consensus appears to be that the Jacoby type of poikiloderma is an entity, but many have expressed an opposite view As Dr O'Leary and Dr Finnerud stated, the poikiloderma syndrome may occur as the result of several diseases The case before us more nearly corresponds to the original case of poikiloderma atrophicans vasculare of Jacoby than any previously exhibited here Notwithstanding this, the discussion today demonstrates the difficulty in classifying this disorder

ANAL DERMATITIS DUE TO THE RESORCINOL IN ANUSOL SUPPOSITORIES TWO CASES OF POSITIVE PATCH TESTS WITH ANUSOL SUPPOSITORIES AND WITH RESORCINOL Presented by DR J H MITCHELL

CASE 1—A mild hemorrhoid developed in a physician in September, 1932 There was an ample accumulation of anusol samples in his office, for three days he used them as directed At the end of that time the itching and burning were intolerable, but the hemorrhoid remained The suppositories were discontinued, and the discomfort gradually disappeared in the course of two weeks There has been no recurrence

A patch test on the arm resulted in a severe reaction According to the information in the hands of Dr John J Gill of the Committee on Pharmacy of the Chicago Medical Society, anusol suppositories contain resorcinol (*meta*-dihydroxybenzene) A letter to the manufacturer elicited no reply on this point As a medical student the patient discovered that a marked sensitization existed as a result of the application of resorcinol to the scalp A patch test with hydroquinone (*para*-dihydroxybenzene) gave an equally sharp reaction A patch test with hexylresorcinol gave a very slight reaction Euresol (mono-acetic acid ester) had been used on the scalp but after a few days a mild dermatitis resulted A pyrocatechin (*ortho*-dioxxybenzene) patch was positive, but less so than with hydroquinone

CASE 2—A man, a cosmetic manufacturer, was first seen in January, 1927, with a severe dermatitis about the anal region He had consulted his family physician for a hemorrhoid There had been no itching He was referred to a dermatologist, who instructed him to break an anusol suppository into two parts, one of which was to be inserted and the other to be rubbed about the anal region A severe pruritus developed He deserted the dermatologist and consulted a proctologist, who discontinued the suppositories but added other irritants At the height of the dermatitis the patient was seen by Dr Mitchell A treatment for dermatitis was obvious but sensitization to the resorcinol in anusol suppositories was not suspected The patient was given radiotherapy and soothing applications, with complete recovery

In April, 1927, the patient was again seen with a mild dermatitis as a result of the appearance of a hemorrhoid and of the use of anusol suppositories The suppositories were still not incriminated, but they were discontinued The patient was not seen again until April 1, 1933, when he appeared with an area of dermatitis the size of his palm about the anal region He stated that another hemorrhoid had

developed and he had applied and inserted the anusol suppository as directed by the dermatologist in 1927. A patch test with anusol suppository gave a violent reaction. A patch test with resorcinol gave a similar reaction. The anal dermatitis subsided with soothing applications and discontinuance of the suppositories.

DISCUSSION

DR L F WEBER. I have had occasion to see several patients who have been treated by anal specialists. I think that we should keep in mind that many ingredients in suppositories can produce irritation, even such a simple thing as cocoa butter may at times cause dermatitis.

DR M E OBERMAYER. I think that we have here a beautiful example of group reaction, since the chemical composition of the substances is so closely allied. We are particularly interested because we are working on crude coal tar, and all these substances are constituents of crude coal tar. I think that resorcinol is a frequent source of irritation.

DR J H MITCHELL. An interesting feature of this case is that Urbach, Nathan and Stern do not agree. Urbach found in 1925 that the two patients sensitized to resorcinol would react to the two isomers of resorcinol. Nathan and Stern found that their patient did not react to the isomers but did react to some of the resorcinol derivatives. We know that in some persons quinine sulphate will cause an eruption, whereas quinidine will not. Urbach gave resorcinol internally and set up a severe generalized eruption. He claims to have desensitized a patient by oral administration of the drug. I should like to give these patients some resorcinol internally, but I am afraid of a too violent reaction.

NOTE.—The patient was later tested with hydroquinone and pyrocatechin and gave sharp reaction to both isomers.

NEW YORK DERMATOLOGICAL SOCIETY

EDWARD R MALONEY, M D, *Secretary*

Regular Meeting, April 25, 1933

GEORGE M MACKEE, M D, *President*

SUBCUTANEOUS FAT NECROSIS OF THE NEW-BORN Presented by DR HOWARD FOX

Baby B, the son of American parents, is the first child of his mother, aged 34. Labor lasted five days, and forceps were used in the delivery. At the age of 2 weeks, the baby was taken to the New York Nursery and Child's Hospital for the treatment of convulsions, at which time the eruption was noticed by the hospital physicians. It consists of subcutaneous nodules the size of a chestnut in each cheek and several smaller ones at the side of the neck. The nodules are covered by normal skin, and are hard to the touch and freely movable on the deeper parts. The convulsions soon subsided and did not recur. The baby weighed 7 pounds and 11 ounces (3,512 Gm) at birth, and now weighs 8 pounds and 8 ounces (3,827 Gm). At no time has there been a rise in temperature or a gastrointestinal disturbance. Microscopic slides showing the usual picture are presented.

DISCUSSION

DR J F FRASER. The histologic picture is that of a foreign body granuloma in the subcutaneous fat. It is not that of true fat necrosis.

DR W J HIGHMAN. There are certain changes taking place in the fat. The term "obstetric lipophagic granuloma" seems to be a better designation.

DR F C COMBES I wonder how much the trauma at delivery has to do with the disease

DR HOWARD FOX This is the seventh case of the disease that I have seen in a comparatively short time and the fourth that has been histologically proved. All of the cases have many striking similarities. They represent a benign condition which may be localized or cover fairly extensive areas. The indurations are invariably insensitive and hard, and disappear spontaneously in a few weeks or months. The babies are often large and are often born after difficult labor. I agree that the term "obstetric lipophagic granuloma" is better than "subcutaneous fat necrosis," as the granulomatous infiltration with foreign body giant cells is always a striking feature.

LINEAR SCLERODERMA Presented by DR HANS J SCHWARTZ

This girl, aged 9 years, was previously shown before the society at the November, 1932, meeting, and is again presented to show the improvement of the condition after nineteen weekly injections of 1 cc of a new pancreas hormone have been made into the buttocks. The induration of the skin in the affected area seems distinctly less, and the skin is softer and more pliable.

A CASE FOR DIAGNOSIS (PIGMENTATION OF THE NECK, NODULAR NEVOID LESIONS OF THE THIGH) Presented by DR FRED WISE

A married woman, aged 38, applied for treatment at the clinic for cutaneous diseases of the New York Post-Graduate Medical School and Hospital a few days ago. She shows two different types of cutaneous lesions, the front and sides of the neck exhibit a mottled, dark brown, widespread pigmentation which extends a short distance over the upper portion of the chest. It is said to be of six years' duration and is not the result of sunburn or of locally applied irritants. On the sides of the neck there are several discoid, depigmented, lentil-sized areas, resembling syphilitic leukoderma coli. Itching of moderate degree is present. The history as to ingestion of drugs is negative. A blood test has not been obtained, the history as to syphilis is negative.

On the anterior aspect of the midportion of the right thigh, extending over an area roughly 6 inches (15 cm) in diameter, is a group of about fifteen nodules, they are dark brown and somewhat violaceous, sharply defined, markedly infiltrated and nonscaly, and they vary in size from that of a pea to that of a hazelnut. There is a remote resemblance to lichen hypertrophicus, but itching is absent, and the patient states that the lesions have been present since childhood. She also complains of frequent attacks of urticaria. Biopsy is refused.

DISCUSSION

DRS F C COMBES and C M WILLIAMS The lesions on the leg are not nevi. The patient's ovaries have been removed, which may be responsible for the pigmented lesions on the neck.

DR E F TRAUB I think that the lesions on the neck are similar to those of a patient whom I presented at a previous meeting with poikiloderma of Civatte, a condition which is most common in middle-aged women approaching the menopause.

LICHEN NITIDUS Presented by DR FRED WISE

A girl, aged 19, born in the United States and apparently robust and in good health, from the clinic for diseases of the skin of the New York Post-Graduate Medical School and Hospital, has an eruption of three weeks' duration. It involves the flexor surfaces of the upper extremities and the wrists, and the left shoulder. The lesions consist of rather small, well defined, pinhead-sized, erythematous, raised papules, arranged in groups forming oval and discoid plaques.

and situated chiefly on the anterior surface of the wrists and the midportion of the forearms, there is one group on the left shoulder. There is more inflammatory reaction in all of the lesions than is commonly encountered in lichen nitidus, the eruption resembles that of lichen scrofulosorum. The histology, however, is characteristic of lichen nitidus.

A section of tissue is presented for demonstration. A comparison of the section with sections obtained from established cases of lichen nitidus revealed identical changes.

DISCUSSION

DR W J HIGHMAN Clinically the condition is not lichen nitidus. Under the microscope, however, the lesions look like lichen nitidus, but sometimes what histologically looks like lichen nitidus proves to be one of the tuberculids. The condition seems more like lichen scrofulosorum than any other condition.

DR HOWARD FOX The term nitidus, meaning bright and shiny, would not apply to these lesions, which are reddish, scaly and without a shiny appearance. I agree with Dr Highman that lichen scrofulosorum is a more likely diagnosis, in spite of the fact that the lesions of this disease are more frequently seen on the trunk.

DR H H WHITEHOUSE I agree with Dr Highman in favoring lichen scrofulosorum rather than lichen nitidus. The lesions are not so abundant nor the groups so disseminate as in the more classic cases.

DR E R MALONEY I agree with Dr Highman that the condition does not look like lichen nitidus clinically, but that the histologic picture closely resembles that of lichen nitidus. I favor the clinical diagnosis of lichen scrofulosorum, even though the lesions in this case are on the arms and not on the trunk.

PEMPHIGUS VULGARIS WITH EXTENSIVE PIGMENTATION IN A NEGRESS Presented by DR HOWARD FOX

A mulattress, aged 48, born in the United States, had always been in robust health until fourteen months ago, when an eruption appeared on the scalp. It then appeared on the elbows, and attained its maximum extent in five months, eventually developing as a symmetrical and profuse eruption of bullae and crusts on the trunk and the extremities. The patient entered Bellevue Hospital four months after the onset and remained there for three months. At the end of that time the bullae and crusts had disappeared, except on the scalp, and a dark brownish pigmentation had appeared. During the first three months of the attack she lost 38 pounds (17.2 Kg). Three months later, a second generalized attack similar to the first occurred. The active lesions recently healed and again were followed by marked pigmentation. Abraded and crusted lesions, scattered over the scalp, remain. They have never disappeared since the beginning of the illness. On examination, the Nikolsky sign was absent. The urine and the red cell count were normal on frequent occasions, except once, when there was a temporary leukocytosis of 15,000 cells. The Pels-Macht test was positive.

A CASE FOR DIAGNOSIS (LICHEN PLANUS? RADIODERMATITIS? ACRODERMATITIS ATROPHICANS?) Presented by DR EUGENE TRAUB

A woman, aged 44, born in the United States, presented an eruption limited to the extremities, of about five years' duration. The skin generally is excessively dry. The eruption is most pronounced over the anterior and the lateral aspects of the lower parts of the legs, where it presents a glazed, violaceous appearance that suggests the confluence of many small, annular lesions. There is some thickening of the skin of the legs, in some areas there seems to be definite atrophy. The eruption is intensely pruritic. On both forearms, over the extensor aspect, there are some lichenification and scaling, suggesting an eczematous process with lichenification—possibly a neurodermite. The patient has been given roentgen treatment.

once a week over all the areas for a period of more than four months, with little relief from the itching but with some improvement in the eruption

A number of diagnoses have been considered, including lichen planus with roentgen sequelae, poikiloderma and scleroderma with roentgen changes. A biopsy has been performed, but the report is not yet available

DISCUSSION

DR FRED WISE I think that the eruption undoubtedly represents the early stages of acrodermatitis chronica atrophicans

DR H J SCHWARTZ I agree with Dr Wise's conception of the case

DR H H WHITEHOUSE Acrodermatitis chronica atrophicans would be the most logical diagnosis. It is possible that some of the atrophy and telangiectasia are due to the roentgen rays

DR C M WILLIAMS I agree with the diagnosis of acrodermatitis, as stated by Dr Wise, and should call attention to the atrophy on the knees

DR W J HIGHMAN I think that the condition is one of the many disturbances of the capillaries of the skin, one diagnosis to be considered is that mentioned by Dr Wise. Another that may be considered is poikiloderma. There are telangiectasias and atrophy of the skin. It may be a little early to venture this opinion, but few of us are able to observe conditions of this sort from the beginning and study the developments, but I have no doubt that this eruption belongs to the group of disturbances of the capillaries of the skin, and Dr Wise's suggestion is as acceptable as any other

DR P E BECHET The patient has a punctate atrophy of the knees, suggesting guttate morphea, and some of the patches are circumscribed and hard, suggesting scleroderma and acrodermatitis chronica atrophicans in the same patient. Such cases have been reported by Dr Wise

DR F C COMBES I agree with Dr Wise and Dr Williams that the condition is an early case of acrodermatitis chronica atrophicans. Both the infiltrative and the atrophic stages are present. On the left arm an ulnar band of scleroderma is beginning

DR E F TRAUB The only reason the possibility of lichen planus was stressed was because of the intense itching accompanying the eruption. I do not believe that this feature is commonly present in acrodermatitis chronica atrophicans or in scleroderma. The location of the lesions is somewhat unusual for acrodermatitis, though it might favor a diagnosis of scleroderma

LUPUS ERYTHEMATOSUS AND SYPHILIS Presented by DR HOWARD FOX

R C, aged 58, a painter, contracted syphilis twenty-one years ago. Five years later an eruption appeared which, as presented, covered the entire left cheek. Five years ago (sixteen years after the initial lesion) ulcerating nodules appeared about the lips, chin and legs, which healed and left soft, pliable, punched-out scars, which are grouped to form portions of circles. The scars are unmistakably the result of syphilis. Other scars suggesting a late syphilid are also present on the leg, some of them—according to the patient's statement—having been caused by shrapnel wounds. The eruption on the left side of the face is a superficial, diffuse, dull, reddish area, which is dry, nonitchy and sharply margined. The border is slightly elevated and is not nodular or beaded at any point. Diascopic pressure failed to show the presence of apple-jelly nodules. In the early stage of the syphilitic infection, treatment was inadequate. Recently the patient has received nine injections of neoarsphenamine and six of bismuth solution, without any appreciable effect on the eruption

Histologic examination at the border of the patch on the cheek was made by Dr T J Riordan, who reported: There are a thickened, adherent scale which dips into the follicular openings, a loose reticulum with markedly dense infiltration (round cells and plasma cells), swollen blood vessels, destruction of the elastic

tissue fibers and, in places, a tendency to basophil degeneration. The picture is strongly suggestive of lupus erythematosus. A diagnosis of syphilis can be considered, but the changes in the blood vessels are not characteristic of the disease.

LUPUS ERYTHEMATOSUS PEMPHIGOIDES Presented by DR EDWARD R MALONEY

P J, a white man, aged 36, born in Scotland, presents on the trunk (the back and the chest) and the scalp a profuse eruption of excoriations and crusted lesions, resulting from broken bullae, some unbroken bullae are visible on the forearms. On the middle of the face there are some erythematous and scaly, slightly crusted lesions resembling somewhat the lesions of lupus erythematosus. The eruption started four months ago. The general condition of the patient is good.

DISCUSSION

DR HOWARD FOX. I think that lupus erythematosus pemphigoides is the probable diagnosis, though it would be necessary to make a microscopic examination to prove it.

DR FRED WISE. Dr Goeckerman and Dr Montgomery occupied themselves with cases of this kind from the histologic standpoint and believe that they are able to differentiate them on histologic grounds. I suggest that Dr Maloney send a specimen to Dr Montgomery.

LATE CONGENITAL SYPHILIS WITH EXTENSIVE SCARRING AND ENOPHTHALMOS
Presented by DR HOWARD FOX

E C, a man, aged 25, an Italo-American, was born in the United States. The following history was obtained from the patient's mother, who came to the United States when 15 years old, shortly after this she married. She had a series of six pregnancies resulting in premature births, following these a child was born at full term, who lived three days. The eighth pregnancy resulted in a child who lived ten months. The patient is the ninth child. Four children were subsequently born, one of whom died of influenza. The other three, all of whom were girls, are still living and apparently well. Two are married, one having two children and the other one. All of these daughters and their children are said to be in good health. The father is living (aged 62) and is apparently well.

The patient returned to Italy with his mother when a young child, and at the age of 5 numerous deep sores developed. In a small town, he was seen by numerous family physicians, none of whom benefited him by treatment. He returned to the United States at the age of 18 and was treated in Bellevue Hospital and in the outpatient department, with the result that all of his lesions eventually healed. He now shows numerous deep-seated and deforming scars in the soft tissues overlying the healed depressions in the bony structures. There are about ten separate scars in the frontal and parietal bones, one on the sternum and one below the sternoclavicular joint. The right leg, from the knee to the ankle, shows extensive atrophy of the soft parts and bony deformity, the circumference of the calf being nearly half that of the opposite leg. There are also sharply bordered, soft, pliable scars about the left knee, some of them being connected with bone. There are no active lesions. The Wassermann test was strongly positive. There is a marked bulging of the right eye, with almost complete loss of vision. The details of the ophthalmologic examination will be reported elsewhere. There is a patch of lupus erythematosus on the cheek. Microscopic slides from this patch are presented.

TERTIARY SYPHILIS Presented by DR FRED WISE

A man, aged 47, married, born in the United States, applied for treatment at the clinic for cutaneous diseases of the New York Post-Graduate Medical School and Hospital about three weeks ago. He exhibits a large lesion of the front and

sides of the face, which is most pronounced and active about the lips and chin and which is causing partial stenosis of the mouth. The cheeks show old conspicuous scars with punched-out and gyrate borders and atrophic sunken surfaces. Adjacent to the scars, the skin presents an infiltrated, reddened, somewhat scaly, diffuse inflammation, resembling the flat variety of lupus vulgaris but exhibiting no signs of apple-jelly nodules. A few scattered, infiltrated, flat, erythematous plaques are noticeable on the cheeks below the area of scar tissue. One of these active areas was removed for histologic examination. The alae nasi were destroyed by an ulcerative process which extended for a short distance into the nares. The bulb of the nose was not attacked by the disease. On the right side of the nose, near the ala, is a small, deep ulcer which extends partly to the adjacent cheek, and the lower lip on the left side also exhibits a small ulcer. The entire process is most pronounced circumorally, and is said to be of five years' duration. The patient stated that five years previously the Wassermann test was negative. The test taken on the day of his first visit proved to be 4 plus. The history as to syphilis was negative, and the patient states that he has never suffered ill health. His wife's blood test is said to be negative. There were no pregnancies.

The histologic report by Dr. Satenstein stated that the tissue showed no changes which could be definitely interpreted as being of either syphilitic or tuberculous nature, but that the finding of a few giant cells deep in the cutis rather favored the diagnosis of lupus vulgaris.

After three intramuscular injections of bismuth, a pronounced improvement in the lesions was obvious.

DISCUSSION

DR. HOWARD FOX: From the clinical standpoint alone, I consider that the condition is a nodular syphilid, as some of the scars have a typical punched-out appearance. I should exclude lupus vulgaris because there is no involvement of the nasal mucosa, in spite of the extent of the eruption, and there is no destruction of the cartilage of the tip of the nose, with the beaklike appearance so characteristic of severe lupus of the nose.

DR. W. J. HIGHMAN: I do not think that this condition is lupus vulgaris. It suggests syphilis, and while it is well known that syphilis and tuberculosis are often difficult to differentiate under the microscope, nevertheless, the appearance of the vessels and the infiltration in this specimen favor syphilis.

A CASE FOR DIAGNOSIS (PITYRIASIS RUBRA PILARIS?) Presented by DR. FRED WISE

A man, aged 35, born in the United States, first applied for treatment at the clinic for cutaneous diseases of the New York Post-Graduate Medical School and Hospital about three weeks ago. (He was demonstrated on a previous occasion, April 11, 1933, before the Manhattan Dermatological Society by Dr. Max Scheer, as having pityriasis rubra pilaris.)

Histologic examination revealed no evidence of pityriasis rubra pilaris or of psoriasis. In one small area of the section, the epidermis presented a dyskeratotic alteration which Dr. Satenstein believed bears a resemblance to the epidermal changes of Darier's dyskeratosis follicularis vegetans.

SUBSEQUENT NOTE.—Three weeks after presentation, a typical and unmistakable eruption of pityriasis rubra pilaris appeared on the abdomen.

DISCUSSION

DR. HOWARD FOX: I cannot accept the diagnosis of pityriasis rubra pilaris. There are no typical acuminate papules in the vicinity of the eruption, the typical palmar keratosis is absent, and the scalp shows no scaling.

DR. GEORGE M. MACKEE: Histologically, the condition in the slide examined is not pityriasis rubra pilaris, and there is an area that shows dyskeratosis which one would not expect to find in an eruption of this sort. While the eruption is not

sufficiently follicular for pityriasis rubra pilaris, I should not care to rule out that diagnosis definitely. Arsenical dermatitis might be considered. The margins of the eruption are too sharp and the distribution too symmetrical and peculiar to permit a diagnosis of dermatitis venenata from crude oil products.

DR W J HIGHMAN The slides do not suggest Darier's disease. There is no dyskeratosis. There is little infiltration, only a certain amount of hyperkeratosis. There happened to be no follicular plugs in the section I saw, and without them I should be inclined to exclude both pityriasis rubra pilaris and Darier's disease. The slide is that of a nondescript dermatitis. The clinical picture alone is that of subacute dermatitis.

DR J F FRASER There are not sufficient data on which to establish a diagnosis. None of the histologic features of Darier's disease are present.

DR GEORGE M MACKEE Dr Satenstein made the simple statement that the area of dyskeratosis resembled that seen in the early stage of Darier's disease. There is, of course, no question of Darier's disease in this case, and no diagnosis to that effect was made.

BROMODERMA (NODULAR) Presented by DR FRED WISE

A man, aged 25, is presented as having a case of erythema nodosum due to the ingestion of bromide salts. He has taken bromides for three weeks. Nodules varying in size from that of a pea to that of a walnut are present on the upper and lower extremities. They are dusky red, slightly elevated, well defined, smooth, nonscaly lesions which are both painful and tender on pressure.

A CASE FOR DIAGNOSIS Presented by DR E F TRAUB

A woman, formerly presented at the March meeting, had peculiar, hard lesions on the cheek resembling calcified milia or keloid. Another section has been removed for examination, and from the cutting it seemed that the cartilage was being encountered. Microscopic examination revealed definitely calcified milia.

MONILIASIS Presented by DR EUGENE TRAUB

A boy, aged 11 years, formerly presented at the March meeting, had a condition in the mouth for eight years. A culture of the stool was made, and from this a yeastlike organism was grown in which, however, typical mycelia failed to develop, even on corn agar. *Monilia albicans* has been grown from the oral lesions.

MINNESOTA DERMATOLOGICAL SOCIETY

D D TURNACLIFF, M D, *Secretary*

April 5, 1933

E Z SHAPIRO, M D, *President, Presiding*

LUPOID OF BOECK Presented by DR H E MICHELSON, Minneapolis

Mrs W, aged 35, is presented because of two indurated plaques on both cheeks. The areas are about the size of a quarter and are adherent to the underlying skin. They have been present for two years. The lesions are not elevated, in fact, a slight depression is noted. The areas are dark blue and have remained unchanged in size for several months. Microscopic sections showed a firmly packed dense infiltrate of epithelioid cells surrounded by a very thin zone of lymphocytes. The Pirquet and Wassermann reactions were negative.

DISCUSSION

DR H E MICHELSON, Minneapolis The patient shows the deep-seated plaques typical of sarcoid of Boeck The histologic picture, as might be expected, showed lobulated accumulations of epithelioid cells surrounded by a fringe of lymphocytes

A CASE FOR DIAGNOSIS (NODULAR SYPHILIS? SARCOID?) Presented by DR H E MICHELSON, Minneapolis

This patient was shown at the last meeting of this Society in Minneapolis, at which time no definite diagnosis was made Since then she has received six intramuscular injections of mercury salicylates The lesions have definitely involuted A second biopsy specimen was shown

DISCUSSION

DR PAUL O'LEARY, Rochester The superficial character of the lesions, the comparative absence of induration, the lack of response to the therapeutic test for syphilis and the nonexistence of scarring in view of the long history are in favor of sarcoid rather than of syphilis The histologic section gives inconclusive evidence, but the diagnosis of sarcoid seems justifiable

DR H E MICHELSON, Minneapolis The patient has been observed for several months but it has been impossible to make a diagnosis The microscopic picture favors syphilis The lesions certainly are not characteristic of sarcoid The serologic reactions have been constantly negative The lesions receded previously without treatment, and they also partially disappeared recently with antisyphilitic treatment The diagnostic problem is most difficult

PAPULAR NECROTIC TUBERCULID Presented by DR H E MICHELSON, Minneapolis

L P, a girl, aged 18, is presented because of numerous hard papular lesions on the palmar surfaces of the finger-tips and on the backs of the hands There are a few similar lesions on the legs and the ears The patient has the chilblain type of circulation, her hands and feet being always cold and clammy The Pirquet reaction was strongly positive, and the Wassermann reaction was negative General examination revealed no active tuberculosis Gold and sodium thiosulphate have been given intravenously, and bismuth intramuscularly The patient was subjected to a diet high in vitamins, and general ultraviolet irradiation was given Improvement has been marked, but there has been one relapse Histologic observations showed the characteristic features of papular necrotic tuberculid

DISCUSSION

DR H E MICHELSON, Minneapolis The patient's condition has improved remarkably with treatment taken by mouth and with injections of bismuth I have recently observed that certain forms of tuberculosis of the skin respond to injections of bismuth

GUMMAS Presented by DR H E MICHELSON, Minneapolis

Mrs S, aged 70, is the mother of six children She has had no miscarriages The Wassermann reaction was negative on three occasions The patient is presented because of two large ulcers on the forearm, which are of three years' duration The condition was diagnosed as sporotrichosis and treatment with potassium iodide was given, without result Healing is slowly advancing with treatment with bismuth and neoarsphenamine

DISCUSSION

DR S E SWEITZER, Minneapolis The worst feature of this case is the lack of response to therapy

DR JOHN BUTLER, Minneapolis The lesion on the palm is different from that on the arm, it has a gradually sloping, elevated, papillomatous border The condition may be blastomycetic dermatitis

A CASE FOR DIAGNOSIS (ANORECTAL SYPHILOMA OR TUBERCULOSIS COLLIQUATIVA) Presented by DR H E MICHELSON, Minneapolis

O J, a man, aged 51, has had draining fistulas around the anus for the past six years The fistulas were excised surgically in 1929 and in 1931, with recurrence on each occasion He has inflammatory nodules and five or six draining sinuses involving an area about 10 cm wide on either side of the anus Proctoscopic examination showed no involvement of the rectum, although hemorrhoids and an adenoma were found The Pirquet reaction was 4 plus, the Wassermann reaction was negative eight times A roentgenogram of the chest gave negative findings for tuberculosis Biopsy showed a deep-seated infiltrate composed of plasma cells, round cells and giant cells, with definite areas of necrosis and sinus formation

DISCUSSION

DR PAUL O'LEARY, Rochester I have seen several patients with this type of pyoderma of the buttocks In the majority of instances the involvement has been much more extensive than in this patient, and the duration of the condition has been considerably longer After several years patients with this condition become debilitated and almost cachectic In the differential diagnosis, syphilis and tuberculosis as well as pyoderma must be considered Efforts to prove the existence of tuberculosis in such patients are usually futile, whereas the incidence of syphilis is rather high In patients in whom serologic reactions have been positive the early therapeutic response to antisyphilitic treatment is rather encouraging, although relapse and extension of the process occur even while the patient is under treatment It is my concept that lesions of this type frequently start as a syphilitic eruption, a gummatous lesion breaks down and a second infection is engrafted on this, which produces the picture of pyoderma The combination of surgical excision of the granulomatous indurated areas, allowing the process to granulate, and antisyphilitic treatment has been successful, although it is a long drawn-out procedure The condition may be classified as a type of pyoderma gangrenosa in which syphilis is one of the etiologic agents

PORRIGO AMIANTACEA Presented by DR S E SWEITZER, Minneapolis

A white woman, aged 40, has lesions on the scalp which have been present for the past three months There have been no subjective symptoms She has been unable to clear up the scalp by any amount of shampooing Examination revealed two plaques on the scalp with an asbestos-like scale extending from the skin up the boles of the hairs

DISCUSSION

DR S E SWEITZER, Minneapolis When the patient entered the hospital the lesions were more typical of porrigo amiantacea than they now are Asbestos-like areas extended onto the hair follicles, one was about the size of a quarter, and the other, about the size of a dime The lesions were hyperkeratotic, and the scale was of asbestos-like consistency The only article on this disease that I could find in the American literature was one by Becker and Muir (Tinea Amiantacea, ARCH DERMAT & SYPH 20 45 [July] 1929) They reported three cases of this disease and found a yeast in the scales The condition is certainly of the same type as that in cases which have been reported in Europe In some patients the lesions respond rapidly to the administration of ointment of ammoniated mercury

DR H E MICHELSON, Minneapolis I think that the name connotes a much graver condition than the disease warrants There are scars some of which form

collars about the hairs, and I presume that the condition could be called *porrigo amiantacea*. Dr Rusten, formerly of the clinic of the University Hospital, took notes on a similar condition which he saw in Vienna, and my impression from his description was that the collars resemble the stems of tiny clay pipes, with the hair coming through the lumen.

LYMPHANGIOMA CIRCUMSCRIPTUM Presented by DR S E SWEITZER, Minneapolis

A white woman, aged 58, has lesions about the eyes which she states have been present for the past ten years. They caused no trouble until recently when they began to interfere with reading.

Examination revealed numerous brownish lesions about the eyes, they were soft and emitted a milky fluid when punctured. They varied in size from that of a pinhead to that of a split pea. A diagnosis of lymphangioma circumscriptum was made.

DISCUSSION

DR JOHN BUTLER, Minneapolis. The condition is cystic whatever the nature of the fluid found. It is not lymphangioma circumscriptum.

DR JOHN F MADDEN, St Paul. I agree with Dr Butler that the eruption is a degenerative process. The patient also has xanthelasma on the skin of the eyelids, which is another type of degeneration.

DR H E MICHELSON, Minneapolis. I think that this is a unique case. The tiny bladder-like cysts are apparently filled with a clear fluid which may be lymph or, possibly, sweat. I saw a patient in whom there were similar lesions on the shaft of the penis. The cysts were punctured, and the base was then cauterized, there was no recurrence.

DR JOHN F MADDEN, St Paul. There is no definite proof that the fluid is lymph. The lesions may be cystic degenerations of the meibomian or sweat glands, and the fluid may be a mucoid substance. A biopsy specimen should be taken to establish the diagnosis.

MORPHEA Presented by DR S E SWEITZER, Minneapolis

A normally developed girl, aged 10, has three firm doughy areas on the right side of the face varying in size from that of a dime to that of a half dollar. The lesions are white and are surrounded by a faint lilac zone. Beneath the jaw on the right side there are a mottled area with increased pigmentation and a peripheral zone of decreased pigmentation.

A biopsy specimen was shown. The child's father stated that the eruption started two years ago as a white spot the size of a dime above the angle of the right mandible. The lesion slowly enlarged until it covered the right cheek, and two similar lesions appeared, one under and one at the side of the right eye. The lesions have also grown slightly. There has been slight itching but no pain. The past history and the family history are essentially without significance.

DISCUSSION

DR JOHN F MADDEN, St Paul. Some observers associate juvenile cases of morphea or scleroderma with dysfunction of the thyroid gland and determine the basal metabolic rates as a routine procedure. I should like to know whether any one present has been able to demonstrate such an association.

DR PAUL O'LEARY, Rochester. At the Mayo Clinic we have studied the basal metabolic rates of practically all our patients with morphea and have found them very inconsistent. The great majority are within normal limits, with a few above and below normal. In my experience, the estimation of the basal metabolic rate is of no value in determining the etiology of or the treatment for this disease.

CARCINOMA OF A MALE BREAST Presented by DR H E MICHELSON, Minneapolis

J C, a man, aged 51, has noticed a change in the right nipple for one year. The lesion consists of a fungating mass 3 cm in diameter, which has replaced the nipple. There is infiltration but no fixation to the wall of the chest. Adenopathy is present in the right axilla. Biopsy showed that the condition was adenocarcinoma.

DISCUSSION

DR E Z SHAPIRO, Duluth. At a recent pathologic conference in Duluth it was pointed out that carcinoma of the male breast is more rapidly fatal than that of the female breast. Deaver has reported approximately 120 cases.

DR F R WRIGHT, Minneapolis. The tumor is a papillary carcinoma of the skin which has developed over the glandular tissue and has extended down into the gland. It is not necessarily very malignant. When such tumors develop in the gland of the male breast, they are exceedingly malignant.

DR JOHN F MADDEN, St Paul. Dr Stenstrom, of the roentgenologic department of the University of Minnesota, stated that cases of carcinoma of the male breast make up about 1 per cent of all cases of carcinoma of the breast seen at the University Hospital. This is the third patient with this condition that he has seen within the past three years.

DR F R WRIGHT, Minneapolis. I should class the tumor as a carcinoma of the skin over the breast. It is not a carcinoma of the breast, but has spread down into the breast.

DR S E SWEITZER, Minneapolis. I think that when the tumor is sectioned it will be found to be very malignant.

DR E Z SHAPIRO, Duluth. What is to be done? Is a radical resection advisable?

DR H E MICHELSON, Minneapolis. Cancer of the male breast is rare, I think that there have been only three cases at the University Hospital. This patient has an adenocarcinoma, and treatment will be the same as that for cancer of the female breast.

NEVUS PIGMENTOSUS ET PAPILOMATOSUS WITH UNDERLYING INFLAMMATION
Presented by DR S E SWEITZER, Minneapolis

A white man, aged 57, has a lesion the size of a quarter in the right inguinal region. It is black and very firm and is raised about 1 cm above the level of the surrounding skin. It is surrounded by a red areola. There are no palpable glands in the inguinal regions.

The patient stated that the lesion has been present since birth, and that it has been growing rapidly during the past month. On several occasions pus has been squeezed from it. There has been no pain.

It is planned to excise the lesion and to examine it for signs of malignancy.

DISCUSSION

DR S E SWEITZER, Minneapolis. I think that the lesion is a mole which has become infected. I shall cut it out, section it and see whether or not it is malignant.

DR H E MICHELSON, Minneapolis. There is no doubt but that the lesion belongs to the nevus group, as the patient states that he has had it all his life. There is a question in my mind as to whether it is a benign melanoma. It seems to be above the surface and resembles a keratotic lesion more nearly than it does a mole. A biopsy should be performed.

KRAUROSIS VULVAE Presented by DR H E MICHELSON, Minneapolis

Mrs M L, aged 56, first noticed dyspareunia two years ago, which has become progressively worse. There is atrophy of the external genitalia with whitish plaques and intense pruritus. Biopsy showed the usual findings of kraurosis, there were no signs of lichen planus or of syphilis.

DISCUSSION

DR PAUL O'LEARY, Rochester Kraurosis vulvae is a significant entity because of the frequency with which it becomes malignant and because it has always been extremely resistant to treatment Dr Counseller and Dr Learmonth have devised an operation whereby the pudic nerve is severed It is rather striking to see the rapidity with which the mucous membrane reddens again after the operation In cases in which leukokeratosis has been present, the plaques have involuted rather quickly This procedure represents a decided advance in neurosurgery, and I believe that it is of definite value in the treatment of kraurosis vulvae

NEW ENGLAND DERMATOLOGICAL SOCIETY

WILLIAM P BOARDMAN, M D, *Secretary*

Annual Meeting, April 12, 1933

ARTHUR M GREENWOOD, M D, *Presiding*

MONILIA INFECTION OF THE MOUTH, FINGERS AND FACE Presented by DR JOHN G DOWNING, Boston

An American schoolboy, aged 15, from the dermatologic department of the Boston City Hospital, has a condition which started at the age of 5, with sores in the mouth which have been treated at various times Two years ago the skin at the base of the nail of the right forefinger became painful, one year ago a similar condition arose on the thumbs He was treated at various hospitals, at which he received intravenous injections of neoarsphenamine and a large number of inhalations of ethyl iodide About a year ago, lesions appeared on his face; they gradually became worse until he was first seen on May 17, 1932 The lesions at that time resembled an eruption due to an iodide, but with increased hygienic care, a high caloric diet and generalized exposure to sunshine, they disappeared almost entirely, returning later in the fall when he went back to school and was no longer exposed to ultraviolet rays The lesions became worse until he was hospitalized, in January, 1933 At that time, he showed numerous crusted and hyperkeratotic lesions of from 1 to 2 cm in diameter, some projecting 1 cm and simulating cutaneous horns The entire area of the nose is a crusted, solid mass The lesions are brownish The patient shows loss of the nails of the thumb and the index finger The mouth shows involvement of the tongue and mucous membrane consisting of superficial ulcerations and white deposits

Organisms recovered from lesions on the face and mouth on several occasions showed by staining (Gram method) single cells, budding forms and thick hyphae.

Cultures on Sabouraud's maltose agar showed an organism which belongs definitely to genus *Monilia* The species is not yet definitely assigned but agrees with the cultural characteristics and sugar fermentations of *Parasaccharomyces* as described by Nye which was found to be identical with *Monilia psilosis* identified by Ashford Inoculation into animals further to confirm identity has not as yet been done

The patient's serum and homologous organism showed 4 plus agglutination at a dilution of 1:320

Cutaneous tests made with a dilute solution of protein fraction from *Monilia* obtained from pulmonary mycosis were negative

Biopsy of the lesion on the face showed marked hyperkeratosis, an occasional area of edema of epidermis, marked growth downward and proliferation of the rete malpighii, large numbers of lymphocytes and plasma cells in the corium and rare foreign body giant cells, there were no organisms demonstrable by the Gram-Weigert stain

DISCUSSION

DR JOHN G DOWNING, Boston It is my opinion that the condition is merely an infection of the skin and tongue by *Monilia*

DR FRANCIS P MCCARTHY, Boston The hyperkeratosis and the acanthosis and cellular reaction of the subcutaneous tissue without the presence of *Monilia* in the deep tissue are unusual The cultures are taken from under the crusts, and I am interested in their dependability The question is whether yeast cells have the property of stimulating the growth of epithelial tissue without appearing in the tissue itself I should like to hear a discussion as to the action of the various infections due to yeast, and as to whether one often finds the organism in the tissues

DR ARTHUR M GREENWOOD, Boston In one case which Dr Rockwood has studied the organism is clearly shown throughout the tissues The pathologic appearance, however, is not hyperkeratotic, but there is a collection of small abscesses surrounding the organism, and the organism is growing in the tissue

DR WALTER T GARFIELD, Boston I should like to ask if in the present case the cultures were taken from parts of the body other than the crusts and the scales

DR ETHEL MAY ROCKWOOD, Boston The earlier cultures were taken from the mouth and nails At that time there was no involvement of the skin The organism from the mouth and nails was the same as that which Dr Downing has grown from the skin

DR FRANCIS P MCCARTHY, Boston I am told that the agglutination of normal serum with this type of organism is much lower than is noted in this case, but I should like to know the real significance of the agglutination

DR ARTHUR M GREENWOOD, Boston There was no agglutination in the case which my associates and I had

MELANOTIC SARCOMA Presented by DR JOHN G DOWNING, Boston

A white American man, aged 38, from the dermatologic department of the Boston City Hospital, presents the following history One year ago he entered the surgical department because of a painless and noninflammatory growth of one year's duration on the right arm Biopsy showed melanotic sarcoma He is now admitted because of pain in the sciatic nerve distribution, which has been apparent for the past three months, and swelling and loss of vision of the right eye for one month

He shows three small, hard, freely movable masses in the subcutaneous tissues in various places over the abdomen The nodules have a dark discoloration

The urine was normal, except for melanin, which was present in large quantities There was marked secondary anemia The red blood corpuscles number 2,700,000 and the hemoglobin (Sahl), 58 per cent

The patient has received symptomatic treatment

DISCUSSION

DR FRANCIS P MCCARTHY, Boston In connection with this case, I have had some interesting postmortem examinations of melanotic sarcoma in which the primary lesion has been in the eye—a lesion not particularly active—and in which the metastatic tumors appeared later, there having been no suggestion that the eye was involved May not this so-called primary lesion on the forearm therefore have been a metastatic tumor? The eye is now involved to such an extent that there is marked exophthalmos May it not be that the lesion of the eye was the primary lesion and that the lesion on the forearm was the first metastasis to be noticed?

GRANULOMA FISSURATUM Presented by DR BERNARD APPEL, Boston

An American housewife, aged 28, from the dermatologic department of the Boston City Hospital, first noticed a slowly growing, relatively asymptomatic lesion in the mouth about six months ago. She wears a loosely fitting upper dental plate. There is a flat, disklike overgrowth of mucous membrane, like a folded coin, at the junction of the right side of the upper jaw and the upper lip.

R L Sutton, Jr, first described two cases (ARCH DERMAT & SYPH 26 425 [Sept] 1932), and the elder Sutton later published the report of another case (ibid 26 865 [Nov] 1932). The reaction which is often observed following chronic irritation of one sort or another is apparently granulomatous. I think that the lesion is merely an irritation caused by the poorly fitting dental plate.

LUPUS ERYTHEMATOSUS DISSEMINATUS Presented by DR RUDOLPH JACOBY, Boston

A white American housewife, aged 60, was presented to the society in October, 1931, because of an eruption on the face, neck and extensor surfaces of the arms. The diagnosis then made was that of lupus erythematosus disseminatus. Following the advice given at that meeting, the patient was given sixty intramuscular injections of bismuth solution by her local physician. She has also taken some insulin for her appetite. Since she was last presented, the patient has been losing weight and hair, and the lesions have become worse. They are still limited to the exposed areas. The eruption started in May, 1931. The lesions consist of an intense itching erythematous eruption which is said to have started on the face and spread shortly to the arms. The plaques vary in size and shape, most of them are round, with infiltrated margins. Many of them have fused, forming areas 2 or 3 inches (5 or 8 cm) in diameter. The lesions on the arms are on the extensor surfaces and are violaceous.

Examination of the blood showed a slight anemia of the simple secondary type and slight leukocytosis. The nonprotein nitrogen was 33 mg, the blood sugar, 98 mg. The white blood cell count was 11,100. A differential blood count showed neutrophils, 51 per cent, lymphocytes, 39 per cent, endothelial cells, 6 per cent, and eosinophils, 4 per cent. The platelet count was normal.

On seeing the case, Dr Oliver suggested that brewers' yeast be tried. It was felt that the patients with generalized eruptions should not receive treatment with gold, following administration of brewers' yeast, a remarkable improvement was noticed in a few cases.

DISCUSSION

DR J H SWARTZ, Boston. I should suggest treatment with brewers' yeast. I have seen some of the cases that Dr Oliver has mentioned, and the results were gratifying. I should also suggest a transfusion. We have given transfusions in two cases, with marked improvement.

PSORIASIS LOCALIZED ON THE FINGERS Presented by DR JOHN G DOWNING, Boston

A white American man, aged 39, unoccupied since January, 1931, states that an eruption started in 1918 while he was doing general work in the army, part of which had to do with the care of horses. The lesions started on the fingers, which rapidly cracked, and later the scalp, eyelids, ears, nose, knees and elbows became affected. When the patient was first seen, in December, 1930, the skin was normal except for the right elbow and the first, second and third fingers of the hands. The elbow shows typical psoriatic lesions. The fingers, anterior and posterior, are covered with dry, dirty-looking, infiltrated, fissured lesions which on curetting show typical white scaling on bleeding bases. At times around both external auditory meatuses there are redness and scaling.

Repeated cultures and scrapings were negative. The Wassermann test of the blood was negative. General neurologic examination gave negative findings. The patient has atrophic rhinitis.

He has received roentgen therapy, a small amount of arsenic and various ointments. The lesions partly cleared, but recurred. They have never entirely disappeared while the patient has been under observation.

DISCUSSION

DR BERNARD APPEL, Boston. I agree with the diagnosis of psoriasis, because the patient resembles closely another patient whom I presented during the last year—a young instructor of chemistry who had lesions over the fingers and the hands.

DR F S BURNS, Boston. I could not identify any lesions on the patient's hands which to my mind were consistent with the diagnosis of psoriasis, but I think that he may have had epidermophytosis as well as chronic keratotic lesions. He shows keratosis pilaris on the elbows and knees. On the right side and on the left knee there are many small, individual lesions. The patient may have seborrhea.

DR JOHN G DOWNING, Boston. There is no question that this man has had psoriasis on the elbows. He has had at various times definite psoriatic lesions on the ears and on the scalp. It is my opinion that the lesions are definitely psoriatic. I have followed the patient for a long time and see no sign of epidermophytosis. He has had no occupation that might cause hyperkeratotic lesions like these.

NAEVUS FLAMMEUS ET VARICOSUS, HEMIHYPERTROPHY Presented by DR JOHN G DOWNING, Boston

W W, a white American electrician, aged 34, states that he has been lopsided since birth. His mother noticed a marked difference between the sides of his body. When he was a boy, the difference was more marked than at present, his face was much larger on the left side, as was the rest of that side of the body, including the arm, hand and leg. He states that he had such a marked limp that his nickname was "Limp." He also has frequent attacks of hemorrhoids.

He shows a superficial vascular nevus between the eyebrows, about 1 inch (2.5 cm) square. The left side of the face is still larger than the right. There is a huge superficial vascular nevus on the body extending from the right side of the abdomen, across the chest, to above the left clavicle on to the neck, with an occasional cavernous hemangioma. The left arm is larger than the right by almost 1 inch in circumference. The left hand is much larger than the right. The left leg shows marked varicosities.

The Wassermann reaction was negative.

Roentgen measurements of the bones of the upper extremities and of the feet showed that those on the left are longer than those on the right side from 0.5 to nearly 2 cm—whereas similar measurements of the bones of the leg and thigh showed that the right were longer than the left by a fraction of a centimeter.

The patient came to my office for inspection of the hand. I obtained a positive fungus growth from the hand and also from the mitten that he wore. The most interesting feature about the condition is the unusual abnormality of the skin, the bone and the soft tissues, and the combination of a vascular nevus on the body with hypertrophy of the soft tissues and enlargement of the bones of the left hand and of the right tibia and varicosities of the leg. This feature has been described in several previous cases. Some have described it as hypertrophy and some as hemihypertrophy. Dr O'Neil told me of similar cases in which he found a definite arteriovenous aneurysm, and he has consented to say something to us about them.

DISCUSSION

DR E E O'NEIL, Boston. In view of all the work done on this subject in the past few years, I think that it is a fair statement to say that we are forced to the conclusion that these cases of hemihypertrophy associated with increased

growth of the bones of the extremities should all be classified under the large heading of congenital arteriovenous fistulas. I think that we have previously classified them all as separate entities. We know that congenital arteriovenous fistulas show various manifestations such as you have seen in the typical case presented, to wit, increase in the size of the arteries and the veins involved, resulting in varicosities and increase in the width and the length of the bones of the extremities. This is marked in the case presented, the arteriovenous junction descending as far as the bone. This takes place within the bone as well as within the soft tissues with resulting communications, and the blood passes without benefit to the capillary blood, because of which there is a definite anoxemia with resulting trophic disturbance. The systemic manifestations of this disease are not so manifest as in the acquired type. In the acquired type there is one communication, in the congenital type there are a great many communications. The systemic manifestation is usually cardiac hypertrophy associated with or without bradycardia. The problem is, what to do. First, you make the diagnosis. A glance is usually sufficient, but should there be doubt, a simple tap of the particular vein involved will result in the withdrawal of arterial blood. If that is insufficient, in some of the cases in which the blood may be venous, determination of oxygen may be made. There is an increase in the oxygen content in the blood withdrawn. The treatment, which has been surgical, is almost futile. There are only three cases reported in the literature in which any good has been done at all. Probably the fistulas have been extremely small in these cases. In cases of large arteriovenous fistulas such as this, I doubt whether surgical treatment or any type of treatment is going to be of value. My associates and I, in our work on varicose veins, have seen between fifteen and twenty cases of definitely proved arteriovenous aneurysm in a series of 50,000 varicosities. All of the patients have been admitted to the hospital as having cases of varicose veins. We have attempted as a treatment to sclerose some of the veins in the hope of providing a thrombus which will plug the fistula. We have known of cases in the past in which the arteriovenous fistulas have healed spontaneously. We know further that in four cases dating over four years the injection of a sclerosing solution has brought about at least a temporary cure, and this has been corroborated in other clinics throughout the country.

Dermatologic nomenclature will have to be revised. I think that all these conditions which we have called hemihypertrophy should be classified under the large heading of arteriovenous fistulas, either with or without the superficial manifestations that the condition may cause.

DR MORRIS J STRAUSS, New Haven, Conn. The patient tells me that in the past few years his smaller limb has been growing to the size of the other. Perhaps Dr Downing can tell whether this is true and, if it is, can explain it.

DR E E O'NEIL, Boston. I measured the legs. The patient feels sure that the involved leg is shorter than what I call the normal leg. As a matter of fact, it is longer. Owing to the tilting of his pelvis, he thinks that it is shorter.

PHILADELPHIA DERMATOLOGICAL SOCIETY

R L GILMAN, M D, *Secretary*

April 21, 1933

F D WEIDMAN, M D, *President*

SCLERODERMA Presented by DR D M PILLSBURY

An American girl, aged 5 years presents a large patch of scleroderma involving the right flank, with extension over the anterior abdominal wall, the right buttock and the right side of the right foot and little toe. The lesions on the trunk and

buttock are of the circumscribed type, and the lesion on the foot is linear. There is marked pigmentation at the periphery of the lesions on the body. The process has been extending for three years.

On examination, the blood count, urine and blood calcium were normal.

DISCUSSION

DR F D WEIDMAN. I thought that the condition was hemiatrophy. The skin is softer over the affected areas and is more pliable than normal skin. The fat is atrophic underneath, the skin is not bound to the underlying parts, and whereas it may be that there is fibrous tissue in the deeper parts to bring it under the category of scleroderma, I think that it would be better to leave out the "derma" in this case. This is a most valuable presentation, because, as we know, in scleroderma there are hemiatrophy and pigmentation in addition. What significance that may have in the way of which of the two came first in the genesis, I do not know. The ribs on the right side appear to me to be much more delicate than those on the left. Roentgen studies of these bones might be made to advantage.

DR D M PILLSBURY. I agree with the suggestion of hemiatrophy as to the lesion on the buttock and that on the trunk. On the foot there were definite sclerodermatous changes in the skin, at least cicatricial changes, because the toe was flexed and somewhat pulled out. We shall have roentgenograms of the ribs taken.

DR S S GREENBAUM. I should like to ask Dr Pillsbury whether the lesion on the abdomen has received treatment of any sort. It looks like a pigmented nevus the center of which has been treated with roentgen rays or radium.

DR D M PILLSBURY. So far as we know, there has been no treatment with roentgen rays or radium. The patient has received ultraviolet and heat therapy and massage with cocoa butter.

DR V C GARNER. Fox, in the *ARCHIVES*, has named a modification of the old picture of sclerema atrophy of the subcutaneous fat. I was struck by the soft character of the lesions and by the presence of a distinctly soft velvety feel to the skin, which occurs with atrophy of the subcutaneous tissue.

SCLERODERMA WITH PIGMENTATION, ADDISON'S DISEASE (?) Presented by DR D M PILLSBURY

An American woman, aged 41, a worker in a tobacco factory, presents generalized pigmentation and patchy sclerodermatous infiltration of the hands, wrists, axillae and trunk. There is marked sclerodactylia. There is some tendency to more marked pigmentation about the mouth, the axillae and the breasts. The buccal mucous membrane shows no pigmentation. There are several areas, particularly over the thighs, which are not pigmented and do not seem to show sclerodermatous infiltration. General physical examination gave essentially negative findings, with the exception of a blood pressure of 100 systolic and 65 diastolic. The Wassermann test was negative. The reaction to the direct van den Bergh test was delayed, the reaction to the indirect test was +0.2 units. The icteric index was 5.

Roentgen examination of the hands showed definite atrophy of the tips of some of the terminal phalanges in a number of fingers of both hands. The entire process is of one year's duration, the scleroderma and pigmentation occurring coincidentally.

DISCUSSION

DR F D WEIDMAN. We all agreed that the condition was extensive bilateral scleroderma. Perhaps the outstanding topic which next merits discussion is whether there is Addison's disease in addition. The papers on scleroderma that came from the Mayo Clinic included this phase, and in them it was the consensus that association with Addison's disease was rare. I suppose that this view must

be accepted, yet in scleroderma we frequently see involvement of the nervous system (often involving the sympathetic system), and we all know what a close anatomicophysilogic (including an embryologic) connection there is between the suprarenal glands and the nervous system. Theoretically, at least, it is not a far stretch of the imagination to see a role of the suprarenal glands at least in some cases of scleroderma.

DR S S GREENBAUM I once had a patient whose condition was exactly like that in the case presented. Pigmentation developed late in the disease, the patient became progressively weakened and died.

DR A STRAUSS Do you think that the woman's occupation would explain the condition? They spray tobacco with arsenic in order to keep out the worms. This may have some bearing on the depigmentation which started after she began to do that work.

DR D M PILLSBURY Longcope has reported atrophy of one suprarenal gland in a case of this sort. I should like to draw attention to the recent studies of Sells (*Arch f Dermat u Syph* 163 337, 1931) in which he states that he believes these cases of scleroderma with sclerodactylia belong in a separate group, which he calls "acrosclerosis." In many respects this case fits in with cases he has described, namely, in the extensive bilateral sclerodermatous changes, in the pigmentation, in the vasomotor changes in the extremities, most marked in the feet, and in the general asthenia. Sells reports that pancreatic extract given by injection or by mouth is very helpful in scleroderma but not in acrosclerosis. Some of his cases have been helped by the Leriche operation.

MULTIPLE NEVI Presented by DR H J SMITH

An infant, aged 9 months, presents a growth beneath the left eye which was first noticed two months ago. It was blue, gradually increasing in size and composed of fairly large blood vessels. The child also has a raised, red growth, about the size of a half dollar, on the right arm, just above the wrist, it has been present since birth.

Over the right hip, extending from the symphysis pubis to the vertebral column, is a large pigmented area, portions of the area are covered with hairs, and a small portion is verrucous. This area was noticed at birth, it has remained stationary as to size, but the parents think that it is becoming lighter.

HEMANGIOMA Presented by DR D M PILLSBURY

C M, a white male infant, aged 2 months, presents a large, raised hemangioma involving the left side of the forehead and the upper eyelid.

DISCUSSION ON PAPERS OF SMITH AND PILLSBURY

DR F D WEIDMAN In Dr Pillsbury's patient, I could feel two distinct spinal processes on some of the lumbar vertebrae. Roentgenograms of the lumbar spine and the sacrum should be taken to determine the presence or absence of spina bifida, which is known sometimes to accompany congenital defects. I might also state that in cases of very extensive pigmentary nevi, such as appeared in Dr Smith's patient, there should be an examination of the spinal fluid for melanotic substances. At necropsy in one case I saw the spinal meninges heavily infiltrated with nevus cells, this accounted for the neurologic symptoms which occurred during life.

DR D M PILLSBURY As I presented the case of hemangioma, I should be grateful for suggestions particularly as to the use of radium about the eye.

DR J M SCHILDKRAUT I saw a patient with hemangioma of the lid who Dr Pfahler treated with electrocoagulation and radium, with perfect results.

DR V C GARNER I saw a child with angioma of the inner aspect of the lower eyelid whose parents wished a consultation with an ophthalmologist. He

advised against radium so near the eye, as he had seen premature cataracts produced by this treatment. Nothing was done in that case, and the angioma has involuted 75 per cent.

DR S S GREENBAUM. Dr Garner has stated an important point. Children should not be treated until they are a year old, unless the lesions are rapidly growing. At the end of a year the lesions will have stopped growing or will have receded, or they will grow quickly and can then be treated. I believe that electrocoagulation will give as nice a scar as carbon dioxide snow. I believe that the lesion on the eye and the hairy pigmented nevus had better be left alone.

DR J M SCHILDARAUT. The idea of radium on the lid was to produce a soft scar.

A CASE FOR DIAGNOSIS (TUBERCULOSIS?) Presented by DR A D KING for DR JOHN H STOKES

A colored boy, aged 14, presented the following physical findings in February, 1933: (1) a huge tumor in the left side of the pelvis, apparently arising from the left side of the ilium, associated with other discrete lymphatic enlargements in the left groin, palpable epitrochlears and palpable nodes in the left axilla and cervical region, in the submental region and at the angle of the jaw, (2) bilateral effusion of both knees, (3) bowed tibia, interstitial keratitis and slight edema of the left leg.

Roentgen examination showed changes in the bones which were thought to be secondary to the mass and could be explained as Hodgkin's disease, low grade abscess or, possibly, a primary tumor which had invaded the disk. A roentgenogram showed bilateral effusion of both knee joints. The Wassermann and Kahn tests of the blood were strongly positive. The blood count was essentially normal. Biopsy of the left inguinal gland showed necrotic granulomatous material, smears for acid-fast bacilli and guinea-pig inoculations were negative. A Levaditi stain for spirochetes was also negative.

The boy gave a history of stiffness and swelling of the right knee joint in June, 1932. The following December, swollen nodes in the left groin were noted. In January, 1933, a fever developed, and the patient was in bed until the time of his admission to the hospital. The interstitial keratitis developed in February. Since February 14, the patient has received six injections of old arsphenamine, totaling 19 Gm, and eleven injections of 2 cc each of soluble bismuth. There has been improvement in the condition of the eyes and knee joints, and it is the consensus that there has been a diminution in the size of the mass in the pelvis.

DISCUSSION

DR F D WEIDMAN. In cases like this presenting extensive involvement of the lymph nodes, studies of the blood are important. We should realize how rapidly hematology has advanced and how complicated the subject has become. Dermatologists should take advantage of the more complete hemograms, including the Schilling count, as well as of studies of biopsy specimens and material from the bone marrow. Such conditions as aleukemic leukemia and lymphosarcoma have been known for a long time, but of late such a refinement in the pathologic process in the lymphatic system as aleukemic reticulosis has been achieved. The possibilities of such essentially lymphatic changes extending into the skin should be kept in mind.

DR A D KING. The interstitial keratitis developed after the institution of bismuth therapy.

DR D M PILLSBURY. It was Dr Stokes' belief that possibly this was an example of the condition described by Vignolo Luttati, in which a combined syphilitic and tuberculous infection occurs with enormous enlargement of the lymph nodes.

Dr R L GILMAN It will be worth while to test this boy with the Frei antigen

A CASE FOR DIAGNOSIS (TUBERCULOSIS?) Presented by DR A D KING for DR JOHN H STOKES

A white American student, aged 14, presents three granulomas on the dorsum of the right foot near the base of the toes. The older process consists of a coin-sized cicatricial area just back of the second and third toes, with evidence of chronic inflammation of parts of the border. There are two satellite granulomas nearby, extending in a straight line backward and outward from the original sites. Lymphadenopathy was not discovered anywhere on this extremity. A roentgenogram taken some time ago showed no changes in the bones. The Wassermann test of the blood was negative. The biopsy was suggestive of tuberculosis.

The onset dates back twelve years, when an inflammatory nodule appeared at the site of the scar. This slowly increased in size, leaving contractile scar tissue in the areas which had healed. The satellite nodules are of more recent development. Therapy has been confined to local applications.

DISCUSSION

DR F D WEIDMAN I was struck by a somewhat linear arrangement of the lesions and by the duskeness and cold feet. The latter suggest a tuberculous factor. I wonder whether the condition could be regarded as Wende's nodular tuberculosis of the hypoderm. I can understand that if the disease began below an interdigital position it would be located at places other than the classic position for such tuberculosis on the leg.

DR V C GARNER If we must classify the condition, I suggest tuberculosis colliquativa, in view of the negative roentgen studies for pathologic changes in the bones.

DR S S GREENBAUM I suggest a fixed dressing for a month or six weeks, and a subsequent report.

EXFOLIATIVE DERMATITIS Presented by DR H BEERMAN

C W, a white man, aged 49, an executive in an ice company, presents a marked generalized erythema with profuse scaling on the face, arms, neck and forearms. The lower extremities are cyanotic, almost tending to purpura. There is marked edema of the face. The tongue is dry, red and shiny, the throat is covered with a thick exudate. There are scattered rhonchi in the chest. The blood pressure was 102 systolic and 60 diastolic, the temperature was 101.4 F.

On admission to the hospital, the blood count showed 29,000 leukocytes with 9 per cent eosinophils. The blood urea nitrogen was 27 mg. The urine was normal. Repeated tests of the blood showed from 13,200 to 27,000 leukocytes, with from 2 to 8 per cent eosinophils. The Wassermann test of the blood was negative.

The patient said that in October, 1932, he had an attack of cutaneous lesions which were not associated with fever, chills or sweats. In January, 1933, he complained of abdominal pain. On March 29, he complained of a generalized pruritic eruption with fever, this was associated with sore throat. After several days the eruption seemed to subside but suddenly flared up, and on April 5 he presented what appeared to be a generalized toxic erythema with a probable septic focus in the throat. On April 7, 8 and 9, he had marked diarrhea and a temperature ranging from 103 to 105 F. The leukocyte count at that time was 8,000. Shortly before admission to the hospital on April 10, scaling of the body began. There was no history of the taking of arsphenamine or other contact with arsenical preparations, nor was there a history of the ingestion of other drugs, such as phenolphthalein. He has had no psoriasis.

DISCUSSION

DR H BEERMAN The medical men are puzzled They cannot find a cause for the high fever, except the dermatologic condition The condition of the throat would not account for a temperature of 105 F

DR F D WEIDMAN Theoretically, a skin that is in a severely exfoliative and congestive state should entail disturbance of heat regulation Most of these patients complain of chilliness This one is different in that respect I wonder whether the condition is going to develop into granuloma fungoides

DR W O ROOP There are so many ways in which arsenic is used in the trades these days A few years ago I saw a paper-hanger in whom severe exfoliative dermatitis developed He had been hanging a great deal of green paper, and we presume that the green paper gets its color from the large amount of arsenic in it I think that we should determine carefully the arsenic background in these cases I should suggest, from an empirical standpoint, that sodium thiosulphate be administered intravenously

SUBSEQUENT REPORT—The patient's skin and general condition became normal, but there was a rather sudden recurrence of the exfoliative features and fever, which were again subsiding

PHENOLPHTHALEIN ERUPTION Presented by DR H BEERMAN

An Italian youth, aged 19, presents an intense erythema associated with a rather bluish hyperpigmentation The process is concentrated on the extremities and around the buttocks There are eroded lesions in the mouth and on the genitalia The latter are markedly swollen The nails show evidences of the formation of new nails underneath the old There is a generalized tender lymphadenopathy except in the cervical region The joints are sore and painful On examination, the heart presented a systolic murmur, and his diastolic blood pressure could not be determined

While the patient was in the hospital his blood count showed 35,000 leukocytes with 1 per cent eosinophils The urine was normal Subsequent blood counts showed 14,000 leukocytes, with from 1 to 12 per cent eosinophils Several serologic tests gave conflicting results negative and positive Smears from the mouth showed a few spirochetes (Vincent's)

The patient came to the University Hospital on March 19, 1933, complaining of a generalized eruption of the skin and itching He said that he had been well until in 1929, when sore mouth developed, which healed in two and one-half weeks In 1930, he had a recurrence associated with the eruption of the skin and the itching Since then he has had two other attacks, the last in January, 1933 During the last two attacks he was confined to hospitals On the third attack, on April 6, a suggestion of secondary syphilis was entertained, but the Wassermann tests of the blood and the spinal fluid were negative A smear from the gums was negative for Vincent's organism The final diagnosis was balanoposthitis The fourth attack was diagnosed as erythema multiforme Prior to the patient's admission to the hospital, he received thirty injections of neoarsphenamine from a private physician While in the hospital he presented a profuse macular eruption over the entire body On the day of admission he had a temperature of 103 F, which gradually fell The eruption involuted after about eight days, but this process was preceded by marked exfoliation of the skin, leaving the hyperpigmented lesions which are now present

The drug which the patient took was called "Italian Effervescent Salts" He is exhibited primarily to show the elusive nature of phenolphthalein eruptions, as well as the complicating factor of high fever in this particular instance

There was an exhibit of a few laxatives containing phenolphthalein

DISCUSSION

DR F D WEIDMAN In principle, phenolphthalein dermatitis is erythema multiforme perstans, i e, it is connected with internal processes It may be that

- the constitutional symptoms in this patient are caused by the fact that the lesions are also occurring in the internal organs, perhaps in the central nervous system, which occurrence would account for the rise in temperature. Edema of the larynx, for example (and probably of other internal parts), occurs in urticaria.

DR H BEERMAN When the patient first entered the hospital, we thought that he might have something to account for the fever, but the medical men could not find anything.

A CASE FOR DIAGNOSIS Presented by DR H BEERMAN

On March 30, 1933, a colored housewife, aged 33, presented a profuse eruption of black, pigmented spots, involving the trunk and extremities, with occasional lesions on the face. She was four months pregnant. The serologic tests gave negative results, but the patient was under treatment for syphilis.

The patient was first seen on June 5, 1931, with a condition diagnosed as latent syphilis. She was given regular treatment with bismuth and neoarsphenamine. During the course of treatment she became pregnant, and coincident with pregnancy, in 1932, generalized hyperpigmented lesions began to develop. At the termination of pregnancy, the lesions became less intense. About four months ago she again became pregnant, with a subsequent flare-up in the intensity of the hyperpigmented lesions. There was also associated pruritus. There is no history of the ingestion of drugs.

DISCUSSION

DR F D WEIDMAN Most of us thought of a phenolphthalein eruption.

DR S S GREENBAUM The patient has been receiving injections of neoarsphenamine. I believe that she has a fixed eruption due to arsenic. The injections were discontinued after she had her last baby, when she became pregnant, she again received injections.

DR F D WEIDMAN I have seen large patches of pigmentation, arranged symmetrically, too, in a Negress who had a uterine fibroid irradiated. There is another instance in which the female reproductive parts were stimulated.

DR H BEERMAN In reference to Dr Greenbaum's remarks, there was no effect of the treatment with neoarsphenamine and bismuth on the hyperpigmented lesions when the patient was not pregnant, but now, with pregnancy, the lesions have become pruritic, as they did during the previous pregnancy.

DR S S GREENBAUM The pigmentation can be disregarded. Pigmentation occurs in the presence of inflammatory lesions. The patient has definite pigmented lesions. I still believe that the condition is a fixed eruption due to arsenic in addition to some toxic underlying factor.

DR F D WEIDMAN I suggest an Aschheim-Zondek test. If the result is positive, it would mean nothing in regard to the dermatosis, but, if negative, it would indicate an upset of the endocrine balance, on which the Aschheim-Zondek test depends.

A CASE FOR DIAGNOSIS (ACRODERMATITIS CHRONICA ATROPHICANS?) Presented by DR C S WRIGHT

On March 1, 1933, I D., a white woman, aged 51, complained of coldness and numbness of the legs. Examination revealed a cyanotic discoloration of the outer side of the left leg, extending from the knee to the ankle. The left foot was of normal color. The right foot presented a purplish, violaceous cyanosis of the right ankle and right knee. The right leg, between the knee and ankle, showed very little discoloration. Both thighs showed a mild, reticulated discoloration suggestive of cutis marmorata. The patient stated that the discoloration began about three years ago, with reddish patches on the dorsum of the right foot. She has recently received treatment for an old gonorrheal Bartholinitis and also for latent syphilis. She complains of hot flushes and headaches, and flows profusely at her menstrual periods, which have become irregular.

The Wassermann reaction of the blood was 4 plus. The spinal fluid gave a negative Wassermann test and a colloidal gold test. There was no increase in globulin and only 1 or 2 cells per field. Oscillometric tests showed normal pulsation readings below both knees and at both ankles. Examination of the cardiovascular system gave negative results, although the descending aorta was somewhat widened. It is suggested that the patient's condition is one of faulty vasomotor mechanism.

DISCUSSION

DR F D WEIDMAN One arm shows livedo reticularis, which is difficult to relate to the more diffuse pigmentation of the lower extremities. I believe that there is a neurologic basis for the dermatitis because the skin of the lower extremities is atrophic. However, I should not be willing to classify the condition outright as acrodermatitis chronica atrophicans.

DR E F CORSON I thought that the condition was acrodermatitis chronica atrophicans. There were grossly atrophic skin, permanently dilated vessels and more or less severity in the lower portion of the leg, diminishing farther up toward the knee. It had practically reached the level of the upper third of the tibia, as I recall.

DR T BUTTERWORTH I suggest a diagnosis of erythromelalgia. The condition began peripherally and has extended upward. It is worse when the foot hangs down. When the patient walks, a bluish tinge appears, and she has a drawing pain in the feet.

Books Received

AN INTRODUCTION TO DERMATOLOGY By Richard L Sutton and Richard L Sutton, Jr Pp 566, with 190 illustrations St Louis C V Mosby Company, 1933

THE HISTORY AND EPIDEMIOLOGY OF SYPHILIS By William Allen Pusey Price, \$2 Pp 113, with 37 illustrations Springfield, Ill Charles C Thomas, 1933

CORRECTIONS

In the transactions of the February 15 meeting of the Chicago Dermatological Society, which appeared in the September issue of the ARCHIVES (28 436, 1933), an error occurred in Dr Ormsby's discussion of the paper by Dr Senear and Dr Caro, entitled, "Mycosis Fungoides," on page 447 The word "nonsyphilitic" in the eighth line of the discussion should have been "nonspecific"

In the article by C W Emmons, entitled, "Fungicidal Action of Some Common Disinfectants on Two Dermatophytes," which appeared in the July issue of the ARCHIVES (28 15, 1933), the phenol coefficient of phenyl-mercuric-nitrate as shown in the table on page 18 should appear as 140 instead of 14

Directory of Dermatologic Societies *

FOREIGN

BRITISH ASSOCIATION OF DERMATOLOGY AND SYPHILOLOGY (CANADIAN BRANCH)

Alberic Marin, President, Drummond Medical Bldg, Montreal
Antonio Sabetta, Secretary-Treasurer, 3435 St Denis St, Montreal
Place Hamilton, Ontario Time 1934

ROYAL SOCIETY OF MEDICINE, SECTION OF DERMATOLOGY

A M H Gray, President, 30 New Cavendish St, W 1, London
W N Goldsmith, Secretary, 6, Upper Wimpole St, W 1, London

NATIONAL DERMATOLOGIC SOCIETIES

AMERICAN MEDICAL ASSOCIATION, SCIENTIFIC ASSEMBLY, SECTION ON DERMATOLOGY AND SYPHILOLOGY

C Guy Lane, Chairman, 416 Marlboro St, Boston
Harry R. Foerster, Secretary, 208 E Wisconsin Ave, Milwaukee
Place Cleveland Time June 11-15, 1934

AMERICAN DERMATOLOGICAL ASSOCIATION

Fred Wise, President, 200 W 59th St, New York
W H Guy, Secretary, 500 Penn Ave, Pittsburgh

SECTIONAL DERMATOLOGIC SOCIETIES

BALTIMORE-WASHINGTON DERMATOLOGICAL SOCIETY

Harry M Robinson, President, 106 E Chase St, Baltimore
M H Goodman, Secretary, 401 Medical Arts Bldg, Baltimore

CENTRAL STATES DERMATOLOGICAL ASSOCIATION

Emmett C Troxell, President, 74 W Adams St, Detroit
William G Saunders, Secretary, 9203 Grand River Ave, Detroit
Place Pittsburgh Time 1933

IOWA AND WESTERN ILLINOIS DERMATOLOGICAL ASSOCIATION

J C Kessler, President, University Hospital, Iowa City, Iowa
Robert E Jameson, Secretary, 1014 First National Bank Bldg, Davenport, Iowa

NEW ENGLAND DERMATOLOGICAL SOCIETY

Rudolph Jacoby, President, 270 Commonwealth Ave, Boston
J Harper Blaisdell, Secretary, 5 Bay State Road, Boston
Place Boston Time April 11, 1934

SOUTHERN MEDICAL ASSOCIATION, SECTION ON DERMATOLOGY AND SYPHILOLOGY

Andrew L Glaze, Chairman, 1928 First Avenue, Birmingham, Ala
Dudley C Smith, Secretary, University, Va
Place Richmond, Va Time November 14-17, 1933

* Secretaries of dermatologic societies are requested to furnish the information necessary for the editor to make this list complete and to keep it up to date

STATE DERMATOLOGIC SOCIETIES

FLORIDA SOCIETY OF DERMATOLOGY AND SYPHILOLOGY

Chairman for each meeting is elected from city in which meeting is held
Elmo D French, Secretary, 602 Huntington Bldg, Miami
Place Jacksonville Time July 2, 1934

LOUISIANA DERMATOLOGICAL SOCIETY

J A Devron, President, 150 Baronne St, New Orleans
M T Van Studdiford, Secretary-Treasurer, 912 Pere Marquette Bldg, New Orleans

MEDICAL SOCIETY OF THE STATE OF NEW YORK, SECTION ON DERMATOLOGY AND SYPHILOLOGY

George M Fisher, Chairman, 264 Genesee St, Utica
Frank Combes, Secretary, 80 W 40th St, New York

MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA SECTION ON DERMATOLOGY

Herbert J Smith, President, 3303 N 17th St, Philadelphia
Robert L Gilman, Secretary, 1930 Chestnut St, Philadelphia

MICHIGAN STATE MEDICAL SOCIETY, SECTION ON DERMATOLOGY AND SYPHILOLOGY

Robert C Jamieson, Chairman, 1551 Woodward Ave, Detroit
A R Woodburne, Secretary, Grand Rapids Clinic, Grand Rapids
Place Battle Creek Time September, 1934

MINNESOTA DERMATOLOGICAL SOCIETY

E Z Shapiro, President, 14 W Superior St, Duluth
D D Turnacliff, Secretary, 407 Medical Arts Bldg, Minneapolis
Time First Wednesday in October, December, February and April

OKLAHOMA DERMATOLOGICAL ASSOCIATION

W A Showman, President, 108 W 6th St, Tulsa
C L Brundage, Secretary, 505 Osler Bldg, Oklahoma City

TEXAS DERMATOLOGICAL SOCIETY

Everett C Fox, President, 1719 Pacific Ave, Dallas
Everett R Seale, Secretary, 1215 Walker Ave, Houston
Place Houston Time Fall, 1933

LOCAL DERMATOLOGIC SOCIETIES

ATLANTA DERMATOLOGICAL SOCIETY

Francis G Jones, President, 384 Peachtree St, Atlanta, Ga
Charles A Wilkins, Secretary, Medical Arts Bldg, Atlanta, Ga

BRONX DERMATOLOGICAL SOCIETY

Samuel Feldman, Chairman, 1955 Grand Concourse, New York
Henry Silver, Secretary, 290 West End Ave, New York

BROOKLYN DERMATOLOGICAL SOCIETY

Louis J Frank, President, 1367 Eastern Parkway, Brooklyn
George F Price, Secretary, 884 Lincoln Place, Brooklyn
Time Third Monday of each month except June, July, August and September

BUFFALO DERMATOLOGICAL SOCIETY

Joseph Brumberg, President, 528 Delaware Ave, Buffalo
William F Hoover, Secretary, 333 Linwood Ave, Buffalo

CHICAGO DERMATOLOGICAL SOCIETY

Oliver S Ormsby, President, 25 E Washington St, Chicago
Max Wien, Secretary, 104 S Michigan Ave, Chicago

CINCINNATI DERMATOLOGICAL SOCIETY

Harry L Claassen, President, Provident Bank Bldg, Cincinnati
Raymond G Senour, Secretary-Treasurer, 19 W 7th St, Cincinnati

CLEVELAND DERMATOLOGICAL SOCIETY

S Littman, President, 10515 Carnegie Ave, Cleveland
H G Miskjian, Secretary, 856 Rose Bldg, Cleveland

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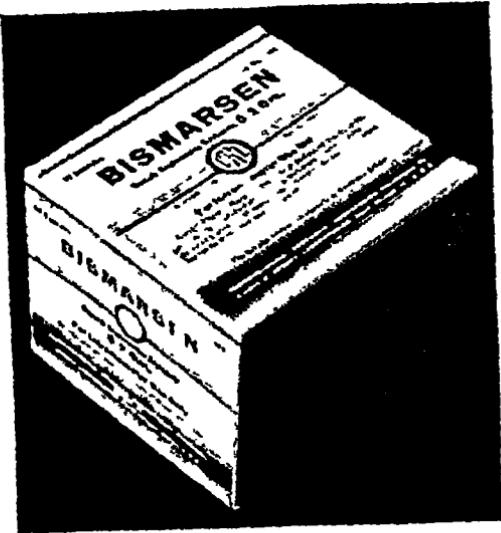
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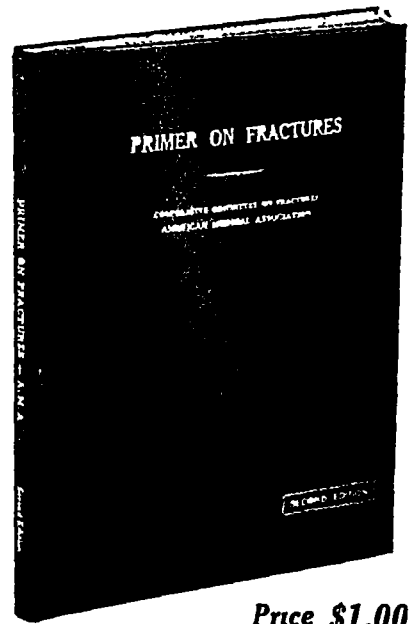
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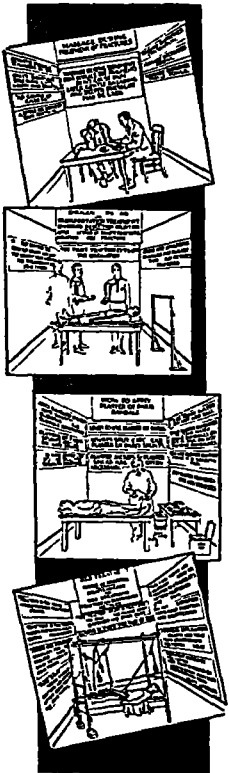
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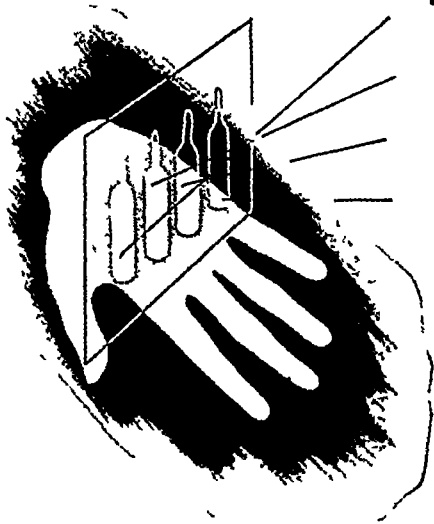
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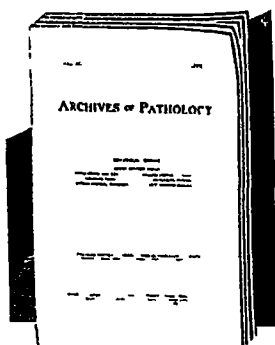
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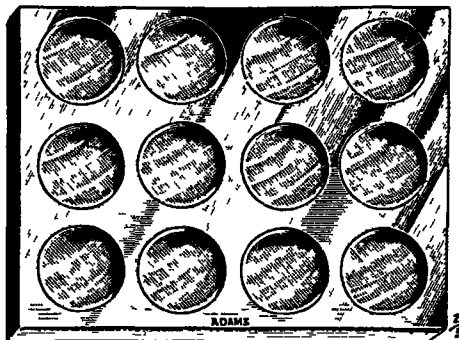
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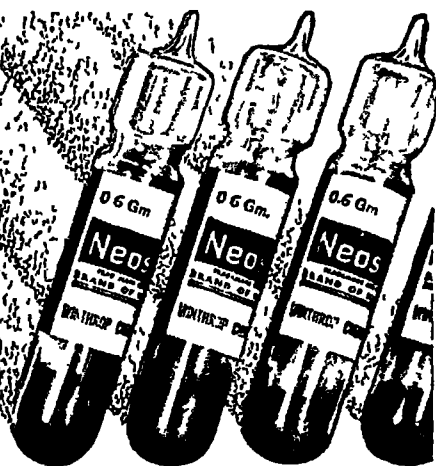
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OCCUPATIONAL MELANOSIS FROM PITCH

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In a paper presented at the meeting of the American Dermatological Association in 1938 we¹ reported on our observations and investigations concerning the photosensitizing properties of pitch and its components. The present paper is a report on melanosis and dermatitis occurring in industries whose workers are exposed to pitch and tar. Histologic studies are recorded. Because of the paucity of reports on this subject in English and American publications, a review of pertinent literature is included.

This investigation was initiated at factory A in Wisconsin because there a troublesome and persistent dermatitis and melanosis had become an economic problem to the employer and were upsetting the morale of the employees. A similar factory in New York and others engaged in related industries in Pennsylvania were subsequently investigated by one of us (L S). More than 500 men were examined, and more than half of these had melanosis or premelanotic dermatitis. There were also many who had miscellaneous cutaneous lesions, such as pitch comedos, keratoses, folliculitis and furunculosis.

At factory A it was observed that the condition was confined to handlers of pitch or pitch products. Most of the employees were fair skinned and of German descent, some were Irish. They lived on farms or in neighboring villages. While some men were affected more severely than others, apparently none sufficiently exposed was immune. The most severe dermatitis and most intense pigmentation were observed in men employed outdoors at cutting, polishing and stacking finished conduits. When an indoor worker was placed in the yard dermatitis invariably developed, when he returned to indoor work it subsided,

* From the United States Public Health Service

1 Foerster, H R, and Schwartz, L. Industrial Dermatitis and Melanosis Due to Photosensitization, Arch Dermat & Syph 39 55 (Jan) 1939

though the pigmentation persisted. Although the indoor work necessitated direct contact with pitch or pitch vapors and exposure to high temperatures, little or no dermatitis was manifest. On change of occupation the dermatitis usually subsided in approximately two weeks, and the pigmentation faded out in three or four months.

Factory A employed 65 men. Twenty-four cases of dermatitis, involving most of the yard workers, were recorded by the manager in 1936 and 1937, and these occurred throughout the year, exhibiting a greater prevalence from October to April than from May to September. The dermatitis involved chiefly the face and neck and was frequently associated with conjunctivitis, both conditions being most troublesome on bright sunny days, especially when there was snow on the ground or a strong wind. Tolerance, with persistent pigmentation, developed in some of the men, but most of them had to be rotated at various jobs, and certain new employees reacted so severely that they were considered unsuited for the work. In addition to dermatitis, hyperpigmentation and conjunctivitis, frequent complaints were made of pitch comedos on the face, hands and forearms, folliculitis and occasional furunculosis. Twenty of the men working in the yard and impregnating rooms were examined, and nearly all showed pitch comedos and acneform folliculitis of the face, forearms and hands, other cutaneous areas being clear. All of them showed considerable diffuse pigmentation of those surfaces exposed to sunlight, considerably darker than an ordinary sun tan, and no hyperpigmentation in covered areas. Some of the yard men showed erythema and desquamation of the face, particularly about the nasal alae, and some had labial herpes and cheilitis. A few workers had inflamed and swollen faces, with particular involvement of the eyelids and lips, and several had on the hands and forearms keratoses and papillomas of the type often seen in tar and petroleum workers. A few miscellaneous nonoccupational cutaneous diseases were noted, but no epitheliomas were observed in this factory.

Another conduit factory, B, in New York, was subsequently investigated. It was found that most of the employees had definite hyperpigmentation of the exposed surfaces of skin and that they were particularly susceptible to sunburn. There were many cases of pitch folliculitis, acne and furunculosis and several cases of epithelioma.

At factory C, in Pennsylvania, where the men were engaged in making roofing materials and in extracting coal tar oils, dermatitis was observed among handlers of both coal tar and coal tar pitch. Pitch dust was observed to be the most irritating, especially as used in the making of fuel briquets, and pitch dust and sunlight were definitely provocative of inflammation of the skin. Several cases of tar acne, tar keratoses and dermatitis were observed, and most of the workers showed a distinctive facial pigmentation.

A fourth investigation was carried out at plant D, where the pitch used by the conduit factories was made. It was learned that workers engaged in handling fuel pitch and exposed to pitch dust but not to vapors, those exposed to both vapors and dust in melting roofing pitch, those engaged in extracting pitch oils by the further heating of fuel pitch and those exposed to the fumes of hot road tar while making roads were all subject to dermatitis and pigmentation and were particularly susceptible to sunburn. Some of the workers were so highly photosensitive that they could not be employed in the day time, but worked satisfactorily on night shifts. It was observed that men on night shifts did not suffer much from sunburn if they cleansed their skins thoroughly with soap and water before going off duty and that these men could be exposed to sunlight before returning to work without dermatitis developing on subsequent contact with tar. In a subsidiary plant where coke was made from pitch and all operations were conducted indoors the workers were not affected.

REPORT OF CASES

The histories of 2 cases of typical dermatitis at factory A, the subject of most of the investigative work, will be stated briefly as examples.

CASE 1—H. D., a white man aged 26, was first employed in March 1937 and assigned to yard work. He had not had any cutaneous disease previously and was in normal health. On his first day at work, cutting and stacking conduits, after ten hours in the sunlight and cold wind his face burned and was diffusely red, as after sunburn. His face remained red for three days and then peeled. He continued at his work, and the sunburn-like inflammation and subsequent peeling of the skin recurred at variable intervals, usually twice weekly, and in such intensity that he could not shave while the inflammation was at its height. Tanning of the face was not observed by him until two months later. The dermatitis was usually most intense about the nose, mouth and malar areas and was frequently attended by conjunctivitis. The hands and forearms were moderately involved and the unprotected part of the neck was inflamed. Some protection and relief were obtained by the wearing of a cap and goggles and the application of various salves. Most irritation and tenderness were noticed in hot weather during profuse sweating, on windy days and when the ground was covered with snow.

The face and neck with the exception of the forehead were diffusely and uniformly reddish brown, except for the markings of blood vessels, and this process was most intense on the sides of the neck, on the malar areas and about the mouth and nose. The backs of the hands and forearms were diffusely brown as with sun tan. The pigmentation was not mottled or reticulated and not concentrated about the follicular openings. Numerous pitch comedos were present on the forearms and hands. There were no keratoses or folliculitis. The skin of the covered parts of the body, including the axillas and groins, was pale and normally pigmented. The mucous membranes were normal except for congestion of the conjunctivas. The scleras were not discolored.

CASE 2—E. B., a white man aged 33, brunet, had been employed for eight years and had had dermatitis recurrently during all this time. He was the

plant forearm and usually spent half his time outdoors. He had occasionally been employed indoors continuously for several weeks, and at such times there had been no dermatitis. After adequate exposure to pitch dust and sunlight he first observed diffuse redness of the face, associated with sensations of burning and smarting, and as the process increased, swelling occurred. Desquamation was observed on about the third day, and this sequence of events occurred about twice weekly, even though the hyperpigmentation persisted. The neck had been only slightly involved, and the hands had never been affected.

The most striking feature on examination was a diffuse and intense grayish brown discoloration of the face, especially about the mouth, cheeks and chin, and of the upper part of the neck. Dermatitis and moderate desquamation were observed in the malar areas, about the mouth and on the chin. The scleras were discolored as in mild jaundice, and the conjunctivas were injected. The scalp was unaffected. The buccal mucosa and the covered parts of the body were of normal color and showed no areas of hyperpigmentation. Cutaneous atrophy, keratoses, papillomas and folliculitis were absent, and there were no features of "sailor's" or "farmer's" skin other than the hyperpigmentation, and this had an unnatural grayish cast. This is significant in view of the eight years of recurrent dermatitis and the reports by Hoffmann, Habermann and others of cutaneous atrophy and hyperkeratosis with tar or pitch melanosis.

REVIEW OF THE LITERATURE ON DERMATITIS AND MELANOSIS DUE TO TAR AND PITCH

The first observations of occupational dermatitis due to pitch and tar are credited to Volkmann, who in 1875 accurately described the various cutaneous changes due to these substances. Ehrmann² subsequently elaborated on these observations and described three types of cutaneous reaction to pitch: (1) dermatitis with hyperkeratoses and papillomas, (2) pitch comedos and folliculitis and (3) melanosis. He aptly designated the last *Indianerhaut* but failed to recognize photosensitization as its cause. He concluded that the melanosis was the consequence of intense hyperemia and irritation of the skin that also resulted in infiltration. He expressed the belief that the scleras were discolored by pitch vapors but that the skin was not discolored in a similar manner. He observed that this condition was confined to the face and neck and the exposed parts of the arms.

Lewin³ appears to have been the first author to associate pitch with a possible photodynamic activity. In this he based his deductions on the earlier experimental work of Raabs⁴ on the effect of fluorescent substances on Infusoria. He observed 100 cases among the employees of a cable works engaged in impregnating paper tubes with hard coal tar pitch, the condition was confined to exposed parts and varied from erythema to dermatitis, associated with sensations of burn-

2 Ehrmann, O. *Monatsh f prakt Dermat* 48 18, 1909

3 Lewin, L. *Munchen med Wchnschr* 60 1529, 1913

4 Raabs, O. *Ztschr f Biol* 39 537, 1900

ing and itching that were most severe when the patient ventured into the sunlight and subsided at night. It is noteworthy that he did not mention the occurrence of pigmentation. Lewin suspected a fluorescent ingredient of the coal tar residue had a photodynamic action on the skin, thereby causing dermatitis, and he pointed out that acridine was such a substance. He did no experimental work, and he concluded with the remarks that this dermatitis might be a direct contact dermatitis or might be the effect of absorption, either directly through the skin or by inhalation of vapors, of a photodynamic substance.

Herxheimer⁵ and Nathan⁵ reported dermatitis solare following photosensitization from "carboneol," a solution of coal tar in carbon tetrachloride and chloroform. This condition was an acute vesicular and papular dermatitis that occurred in sharply demarcated elevated edematous plaques on light-exposed areas only. Melanosis apparently did not occur. The ultraviolet rays of sunlight were suspected of being the sensitizing radiation, but no experiments were made to confirm this opinion.

In 1917 Riehl⁶ described a peculiar pigmentary disorder of the skin, and his observation resulted in subsequent confusion of the condition with tar melanoses. Riehl's patients were men, women and children of indoor habits and activities, observed in Vienna in the winter and spring, and exhibiting a diffuse dark brown—at times bronze or grayish brown—discoloration involving chiefly the forehead and sides of the face. The affected skin was thickened, and the neck and in some cases the hands, extensor surfaces of the forearms, axillary folds, mammae and umbilical and inguinal areas were likewise involved. The pigmentation appeared gradually, without evidence of preceding inflammation. While the appearance in most cases suggested the tanning of sunlight, there had been little exposure to sun, and the pigmentation was not sharply limited by the clothing and was definitely and slowly progressive. There was no record of contact with tar preparations. Riehl concluded that this disease was caused by a toxemia of nutritional origin, probably resulting from the use of horse beans added to flour and the substitution of mineral grease for butter, possibly sensitizing the affected persons to the pigmentary reactions of sunlight.

The following year (1918) Hoffmann and Habermann⁷ described in patients who had been in direct contact with tars, oils and greases a melanodermatitis which they attributed to the action of medicinal and occupational tar substitutes for the petroleum products not obtainable on account of the war blockade.

5 Herzheimer, K., and Nathan, E. *Dermat Ztschr* **24**:385, 1917

6 Riehl, G. *Wien klin Wchnschr* **30**:780, 1917

7 Hoffmann, E., and Habermann, R. *Deutsche med Wchnschr* **44**:261, 1918

In Hoffmann and Habermann's cases there was a macular or mottled, at times somewhat reticulated, pigmentation in various shades of brown to slate gray. This melanosis was particularly well defined on the arms, where it was sometimes configurated or lichenoid, and it was not uniformly diffuse, like Riehl's, or sharply demarcated by the clothing, as in Ehrmann's cases. Small petechiae were noted as early manifestations, and some patients showed follicular keratoses, comedos and warty proliferations, but the pigmentary changes predominated. The authors described a hyperkeratotic follicular pigmented type, attributed to contact with tar and pitch contaminants of lubricating oils, paraffins, greases and petrolatum preparations, and a toxic melanodermatitis, ascribed to inhalation of vapors containing tar or pitch. They suspected that heat or light rays play a part in the pigmentation, in either its causation or its intensification and subsequently recognized light sensitization as a causative or contributing factor, with acridine as the possible photosensitizing agent. No investigation was made of this subject.

Meirowsky⁸ reported a case of melanosis of the face resulting from contact with "goudron," a tar distillate and paraffin preparation used for insulating walls against moisture. He attributed the melanosis to the inhalation of tar vapors by persons photosensitized by the ingestion of food substitutes.

Blaschko⁹ called attention to the marked increase in these melanoses after the onset of the war, particularly in industry, and they became known as the "war melanoses." A distinction was made between those described by Riehl and those by Hoffmann and Habermann.

Habermann¹⁰ wrote exhaustively on this subject, considered both endogenous and exogenous sources of sensitization to light, chiefly by acridine, and stated that in all cases the melanosis was fundamentally an inflammatory toxic process. Habermann stated that this condition and Riehl's could not be sharply differentiated histologically, and on the basis of histologic as well as clinical study he favored Hoffmann's designation, melanodermatitis toxica lichenoides, for all cases.

Koelsch¹¹ and Ullmann¹² have both written extensively on the occurrence of dermatoses in the tar and naphtha distilling industries. In spite of fundamental chemical differences in the two types of distillates, they were observed to cause similar dermatoses, which were grouped in three fundamental clinical types: (1) follicular lesions

8 Meirowsky. *Arch f Dermat u Syph* **25** 378, 1918.

9 Blaschko, A. *Dermat Ztschr (supp)* **26** 2, 1918.

10 Habermann, R. *Dermat Ztschr* **30** 62 1920.

11 Koelsch, F. *Zentralbl f Gewerbehyg* **7** 157, 1919. in Ullmann,¹² p 303.

12 Ullmann, K. *Die Schädigungen der Haut durch Beruf und gewerbliche Arbeit*, Leipzig, Leopold Voss, 1926, vol 2, p 226.

produced by both mechanical plugging and inflammation, (2) epidermal proliferations, such as keratoses, verrucae, papillomas and epitheliomas, and (3) melanoses. The melanoses were found particularly after inflammation, apparently dermatitis venenata, produced by lubricating oils.

Referring to the melanoses, Koelsch expressed disagreement with those authors who attributed the pigmentation to the inhalation or swallowing of specific toxic agents and with those who blamed nutritional disturbances or internal toxemias of a pellagroid nature. Koelsch stated that when the skin is sensitized by derivatives of coal tar it is susceptible to the action of light and becomes inflamed, pigmentation resulting on subsidence of the dermatitis. The American pitches originating from petroleum, used before the war, were thought to be less harmful in this regard.

Koelsch described the intermittent character of the inflammatory reactions of pitch and asphalt workers and observed that the symptoms of erythema, edema and pruritus, confined to exposed parts, were of only moderate severity in diffuse light and became intensified, at times unbearably so, in direct sunlight or reflected light from snow. Koelsch observed that many of the workers with melanoderma had no subjective symptoms and had observed only yellowish to brownish discoloration of the skin, without noticeable preceding inflammation. The pigmentation was usually diffuse but occasionally retiform or macular. The forehead, face and neck were always involved, the covered parts occasionally. The scleras were frequently yellow, and keratoses were sometimes present.

Koelsch also reported on pigmentation of the face and keratoses and folliculitis on exposed areas and parts in contact with contaminated clothing, occurring in workers with carbolineum (crude anthracene oil).

Arnstein¹³ recorded tar melanoses in female employees of a dry battery factory where tar was used as a packing material and where the workers were exposed to tar fumes as well as to direct contact with tar in a poorly ventilated room. He suggested that nutritional disturbances might predispose to pigmentation, though he expressed the belief that impurities in the tar and paraffin products, as suggested by Koelsch, might have been factors, but he did not comment on exposure to light as a possible etiologic factor. In addition, many other cases of melanosis from exposure to coal and tar and their derivatives have been reported by German authors. A few have been reported in the French and British literature.

13 Arnstein, A. *Munchen med Wchnschr* 67 902, 1920

O'Donovan¹⁴ observed melanosis in outdoor workers handling crude anthracene while men engaged indoors in packing the distillates were unaffected

Kistiakowski¹⁵ reported photosensitization dermatitis and pigmentation of exposed parts, comedos and folliculitis in the making of artificial asphalt from coal tar, anthracene oil and coal tar pitch. He ascribed the photosensitization to the inhalation of vapors and the swallowing of dust containing anthracene, acridine and phenanthrene

Wieder¹⁶ reported an occupational melanosis of the face in a chemist who, on experimental testing, reacted photochemically to both ordinary naphthalene and benzanthrone-anthraquinone when exposed to artificial ultraviolet rays, but who exhibited no reactions when these rays were excluded. Tests were negative as regards pigmentation with chemically pure naphthalene and a number of other chemicals with which the patient was repeatedly in contact. The history indicated a definite association of mild dermatitis and subsequent melanosis, particularly with exposure to the fumes of naphthalene in sulfonation. Wieder cited Ullmann as stating that while Bayet and others attributed pigmentation from tar and pitch to the arsenic contained in coal, Vossenaar demonstrated that coal workers in whom "pitch skin" was uncommon showed four times as much arsenic in the urine as workers in a briquet factory, in whom pitch skin is common. Other investigators have supported Vossenaar, among them Filigu, who produced tar and pitch skin with arsenic-free tar

Kinnear¹⁷ reported in a jute spinner melanosis which he described as a dark brown macular pigmentation of the face with an associated oil folliculitis of the arms, forearms and legs. He described the condition as being similar to that reported by Hoffmann and Habermann, though he called it Riehl's melanosis. The pigmentation in Kinnear's case was reticular in distribution, with pale areas corresponding to follicular openings. Hoffmann and Habermann, Riehl and Kinnear reported the observation of atrophy, as well as of hyperkeratosis and reticulation, and though atrophy was never marked, it induced Kinnear to group the condition with the poikilodermas. He likewise included Civatte's *poikiloderme réticulée pigmentaire du visage et du cou* and differentiated this group from Jacobi's type of poikiloderma, which exhibits more extensive atrophy, less pigmentation and a characteristic telangiectasia

14 O'Donovan, W. J. Cancer of the Skin Due to Occupation. Tar Carcinoma, Arch Dermat & Syph **19** 595 (April) 1929

15 Kistiakowski, E. W. Ann de dermat et syph **1** 63, 1930

16 Wieder, L. M. Occupational Melanosis, with Report of a Case, Arch Dermat & Syph **25** 624 (April) 1932

17 Kinnear, J. Brit J Dermat **47** 191, 1935

None of Civatte's patients were known to have been in contact with oil or tar, but Civatte expressed the suspicion that the condition he reported was in some way the result of photosensitization

HISTOPATHOLOGY

Three specimens for histologic study were removed from H D One was taken from an area of pigmentation on an exposed portion of the neck that had been tested with pitch and exposed to daylight ten days previously and had reacted with a sharp erythema and edema, the second, from an adjacent exposed and tanned area, of previous pitch melanosis that had not been subjected to a patch test, and the third, from a small area of pigmentation on the abdomen that had developed after a mild erythema following repetition of a patch test with pitch and ultraviolet rays, without the production of erythema or pigmentation in the surrounding normal skin ¹⁹

The sections from these three specimens showed similar changes in varying degree There were hyperkeratosis, an increase in the granular layer, intercellular edema in the rete, edema and dilated vascular spaces in the papillae, subpapillary layer and midcutis and a moderate perivascular infiltrate about the vascular structures, chiefly of endothelioid and round cells. The silver stain showed an abundance of fine pigment granules in and among the cells of the basal layer and numerous small aggregations of pigment-containing cells in the upper and the middle portion of the cutis, chiefly in the vicinity of the vessels and follicular structures but widely distributed

The first biopsy specimen showed more edema and inflammatory change than the others, and the third, a greater amount of pigment in the corium The amount of pigment in all sections studied was moderate, and this may be accounted for by the short intervals between the patch tests and the removal of the specimens and by the absence of sunshine at the time the tests were made

Meirowsky ²⁰ studied 8 cases of tar melanosis histologically In most of them there was little or no pigment in the epidermis, but in all there was an abundance of pigment in the corium, demonstrable by silver stain but giving a negative reaction to the dopa test In the case of a pitch worker with melanosis of the face and body the cells of the basal layer showed sparse but definite pigmentation, with underlying slight pigmentation in the uppermost layer of the corium Beneath this area was a dense layer of heavily pigmented connective tissue cells, so densely packed with coarse pigment granules that only their walls could be

18 Footnote deleted on proof

19 Dr S W Becker prepared the specimens

20 Meirowsky *Virchows Arch f path Anat* 255 303, 1925

defined. With few exceptions, they did not exhibit dendrites. The pigmented cells were grouped about the lymph spaces or distributed in clusters and singly throughout the corium. Some groups of pigment cells were so dense as to simulate a melanotic neoplasm. These histologic observations were similar to those of Lipschutz²¹ in mice that had been painted with tar.

In cases of Riehl's⁶ melanosis there were no inflammatory changes in the epidermis and little pigment, even in the corium. The latter showed a sharply defined round cell infiltrate directly below the papillae and intensely pigmented chromatophores in a horizontal band below the papillae, in clusters and scattered about the corium. The infiltrate extended deeper only about the follicles, and moderate edema and little infiltrate were noted in the papillae.

In Hoffmann and Habermann's⁷ cases of toxic melanodermitis the cells of the basal layer and the lower part of the rete showed little or no pigment, and the upper part of the rete and the stratum corneum were free of pigment, while in the papillae and cutis proper there was an increase of chromatophores, arranged in groups or sparsely distributed directly beneath the epidermis. There were hyperkeratosis, no parakeratosis, a well developed stratum granulosum and in some cases constriction of the rete and epidermal dystrophy. There were infiltrates about the follicles, but the middle and the deep part of the cutis were otherwise unchanged.

In hyperkeratosis follicularis pigmentosa these authors observed pronounced pigmentation of the epidermis and an increase of large chromatophores, associated with edema and a mild inflammatory perivascular reaction in the papillary and subpapillary layers of the corium. There were also large follicular horny plugs.

Kissmeyer²² noted edema of the epidermis and papillae, little pigment in the epidermis and a marked accumulation of pigment cells in the upper part of the cutis, with a moderate inflammatory infiltrate, both perivascular and diffuse, and a positive dopa reaction in the basal layer.

In Wieder's case of occupational melanosis the epidermis showed moderate follicular hyperkeratosis and slight intracellular edema, with considerable pigmentary activity in the melanoblasts of the basal layer and an abundance of pigment in the chromatophores of the upper part of the cutis. A moderate amount of pigmentation was observed in the rete. There were no marked changes in the vessels or the connective tissue indicative of inflammation, which conformed to the clinical findings.

21. Lipschutz, cited by Meirowsky²⁰

22. Kissmeyer, A. *Arch f Dermat u Syph* 140 357, 1922

MELANIN AND MELANOSIS

Normal pigmentation and hyperpigmentation of the skin are due to the presence of an organic dye, a pyrocatechin derivative, melanin, which is found chiefly in the spider-like dendritic cells interposed between the cuboidal cells of the basal layer, but may also be present elsewhere in the epidermis and in the corium. The origin of the dendritic cells is not definitely known. Peck²³ supported the view of Bloch that they represent special functional phases of ectodermal pigment-producing basal cells, while Becker²⁴ expressed the belief that they are normally present in the basal layer and assume the pigmented dendritic form under the influence of pigment production, and Masson claimed to have demonstrated their genesis from nerve tissue of the Langerhans cell type.

Pigment production is a complex process. It was exhaustively studied by Bloch²⁵. The epidermal dendritic cells of the basal layer and hair follicles are called melanoblasts and are believed to produce melanin from a colorless propigment, melanogen. The latter is probably derived from a polycyclic amino acid, such as tyrosine, by action of an enzyme, such as tyrosinase, and is taken up by the melanoblasts. These cells then produce the colored melanin granules within their protoplasm either by simple oxidation of the melanogen or by the interaction of a specific catalytic ferment or enzyme, such as oxidase, thought to be normally present. This ferment is apparently activated by a specific radiation of light. The colorless melanogen may be present in the cell or may be taken up by it at the time of pigment production. Bloch called it an epinephrine-like chemical, 3,4-dioxyphenylalanine, or dopa, and he designated the activating ferment dopa oxidase and demonstrated the specificity of the reaction.

Kissmeyer²² called attention to the large number of polycyclic hydrocarbons known to be present in coal tar and theorized that it may contain one or more as yet unidentified substances chemically closely related to dioxyphenylalanine that may act as propigment activators and react with a pigment oxidase in the production of melanin or a melanin-like substance. He cited a somewhat analogous purely physical reaction described by Kreibich in which paradimethylphenylenediamine served as the reagent.

23 Peck, S. M. Pigment (Melanin) Studies of Human Skin After Application of Thorium X, with Special Reference to the Origin and Function of Dendritic Cells, *Arch. Dermat. & Syph.* **21** 916 (June) 1930.

24 Becker, S. W. Melanin Pigmentation. A Systematic Study of the Pigment of Human Skin and Upper Mucous Membranes, with Special Consideration of the Pigmented Dendritic Cells, *Arch. Dermat. & Syph.* **16** 259 (Sept.) 1927.

25 Bloch, B., in Jadassohn, J. *Handbuch der Haut- und Geschlechtskrankheiten*, Berlin, Julius Springer, 1927, vol. 1, pt. 1, p. 434.

Mayer²⁶ expressed the belief that there is an intermediate step in the oxidation of melanogen into melanin, the first being the production of a quinone, and that it combines with a protein, albuminoid or lipid, the color of the pigment varying with the combination. Mayer stated that he did not consider dopa essential for the production of melanin.

While it appears that the biochemical reaction of melanin production is an oxidation process, Meirowsky expressed the belief that he had demonstrated pigmentation without the action of an oxidizing ferment, apparently through the effect of heat or of ultraviolet rays.

Melanin may be produced in the absence of light, Becker²⁴ having demonstrated its presence in dendritic cells in the buccal and pharyngeal mucosa. It is found also in mongolian spots, in internal melanotic tumors and on covered parts in postinflammatory pigmentation.

In the cutis melanin is found in spindle-shaped connective tissue cells called melanophores or chromatophores. These are phagocytic cells that carry the pigment from the dendritic cells to the blood vessels. Meirowsky⁸ expressed the opinion that under certain conditions, such as prevail in tar melanoses, the melanophores may become self producers of melanin. In his cases of tar melanosis the melanin deposits were pronounced in the corium, while scanty or absent in the epidermis. In experimental tar painting of mice, Lipschutz²¹ observed pigmentation in the corium forty hours after a single application, and he concluded that the epidermal cells could not produce melanin in that time and transmit it to the corium and that therefore it was produced by the cells of the corium.

PREVENTION AND TREATMENT

The most important and effective procedure in combating pitch dermatoses is a problem in sanitary engineering. It was observed by us that medicinal applications, both therapeutic and protective, were unsatisfactory in ameliorating this dermatitis and ineffective in eliminating it. The installation of ventilators, the discontinuance of operations creating excessive pitch dust, particularly outdoors, and other engineering improvements, such as enclosing certain procedures, all carried out at the instigation of one of us (L. S.), reduced to a minor hazard what had been a major one threatening the successful operation of the factories. Likewise of importance is the matter of personal hygiene of the workers, which can be effectively enforced by providing adequate locker space and requiring daily shower baths and daily change to clean work clothes. Supervision by an industrial nurse with authority to enforce rules of sanitation and hygiene is essential.

26 Mayer, R. L. *Klin. Wchnschr.* 7:2471, 1928.

In our first paper we reported that our investigations indicated that dermatitis and melanosis from pitch are due to its photosensitizing properties, and that the inherent photosensitizers are the aromatic hydrocarbons, inclusive of acridine and anthracene, and possibly also as yet unrecognized photosensitizers, such as derivatives of chlorophyll. The use of chemical blockers of light in applications to exposed cutaneous surfaces is therefore of importance in both therapy and prophylaxis.

As protective creams we have found preparations of resorcinol and quinine satisfactory, of these the following formula is an example

	Parts
Quinine hydrochloride	0.02
Stearic acid	2.9
Wool fat	8
Liquid petrolatum	5
Triethanolamine	0.38
Ethyldiethyleneglycol (carbitol)	1
Terpineol	0.01
Distilled water	10

In the treatment of pitch dermatitis we provided relief with protective and sedative lotions containing ichthammol and zinc oxide for application during working hours and soothing emulsions or creams for application at night.

For protection against acridine sensitization Hausmann and Haxthausen²⁷ cited Janison, who advised oral administration of 0.25 Gm of resorcinol daily. Janison stated that resorcinol acts as an antiphotocatalyst but that it may cause gastric disturbances and dermatitis. He stated that pyrocatechin (orthodioxybenzene) is superior to resorcinol because its greater solubility allows it to be used intravenously. The observations that pigmented animals are not photosensitive and that in fagopyrism only the vitiliginous areas show inflammation suggest that therapeutic exposures to ultraviolet rays to build up a defensive melanosis of the face and neck may have some practical application in persons who are unable to avoid the acquisition of dermatitis.

CONCLUSIONS

1 Dermatitis and melanosis are important occupational hazards in coal tar and pitch industries.

2 Most workmen exposed to this hazard have either dermatitis or melanosis, though some are not affected, and variations in susceptibility exist.

²⁷ Hausmann, W., and Haxthausen, H. *Die Lichterkrankungen der Haut, Sonderbande zu Strahlentherapie*, Berlin, Urban & Schwarzenberg, 1929, vol. 11, p. 1.

3 Histologic studies indicate that the discoloration due to pitch is true melanosis

4 We have previously reported that pitch dermatitis and melanosis are true reactions of photosensitization resulting from the local exogenous activity of a specific photosensitizer in pitch, activated by specific spectral bands of light

5 We believe that pitch dermatitis can be eliminated as a hazard to indoor workers by effective sanitary engineering and by provision for and enforcement of thorough personal hygiene

6 By similar means we believe that it can be materially reduced and its severity ameliorated among outdoor workers and that where exposure to pitch and tar dust and vapors cannot be avoided the incidence of dermatitis can be reduced by night operations, rotation of work and the selection of a tolerant personnel

7 Appropriate protective and therapeutic measures include the application of creams and lotions containing physical and chemical blockers of light

ACETARSONE THERAPY IN ONE HUNDRED AND EIGHTY-SEVEN CASES OF CONGENITAL SYPHILIS

WITH OBSERVATIONS ON A GROUP OF EIGHTY-SEVEN PATIENTS RECEIVING NO TREATMENT

DONALD M PILLSBURY, M D

AND

H HARRIS PERLMAN, M D

PHILADELPHIA

Since 1931, administration of acetarsone by mouth has been the principal method of treatment in cases of congenital syphilis observed in the Sigma Clinic of the Children's Hospital. At the time of this report 196 patients have received this drug, and for 187 of these we believe that the diagnosis of syphilis was correct. We have followed the 187 cases for periods varying from two months to six and one-half years. The present study is a review of these cases, particularly in regard to the incidence of reactions to treatment, the effect of treatment on the Wassermann and the Kahn reaction of the blood, the incidence of clinical and serologic relapse in cases followed for a year or more and the incidence of neurosyphilis. The average period during which these cases were followed after treatment was begun was two and eight-tenths years. The average period of observation of the same cases since the admission to the outpatient department was four and four-tenths years.

In 87 cases in this series the diagnosis of syphilis was not made in the dispensary at the initial examination and some subsequent examinations, and in this group the average period between registration of the patient and recognition of the presence of syphilis was three years. This has afforded us an opportunity for analysis of a considerable number of cases in an effort to determine the reasons for failure to make an initial diagnosis of syphilis and the incidence of active lesions of syphilis after the institution of medical supervision. It is our feeling that a consideration of the reasons for failure to recognize syphilis in general pediatric practice is of far greater importance than a discussion of pat-

A portion of the acetarsone used in this study was furnished by Merck & Co., Rahway, N. J.

Read before the Section on Dermatology and Syphilology at the Eighty-Ninth Annual Session of the American Medical Association, San Francisco, June 16, 1938.

From the Sigma Clinic of the Children's Hospital and the Department of Dermatology and Syphilology, University of Pennsylvania School of Medicine, John H. Stokes, M.D., Director.

ticular methods of treatment, since the cure in the majority of cases is absolutely dependent on early diagnosis

Acetarzone was originally synthesized by Ehrlich and Hata,¹ but apparently was discarded by them as too toxic. In 1921, Fournieu² revived the drug as an antisyphilitic agent and stimulated trials of it in treatment of various aspects of the disease. Since then over forty reports of the effect of acetarsone on congenital syphilis have appeared. We have reviewed most of these papers, but they have been amply summarized by several writers,³ and we shall confine our reference to them to certain aspects of our report. Whipple and Dunham⁴ stated that in only four studies has the period of observation been sufficient for any adequate evaluation of acetarsone. The most extensive series in which the cases have been well followed, consisting of 65 cases observed for three years, has been reported by Traisman^{5d}.

The status of acetarsone as a preventer of late congenital syphilis has by no means been settled. Recently its use for man has been severely criticized by Rosahn and Kemp,⁵ editorially by the *American Journal of Syphilis, Gonorrhea and Venereal Diseases*⁶ and by Cole.⁷ On the other hand, American pediatricians have uniformly reported favorably on the drug, and Traisman⁸ and Rosenbaum⁹ have answered

1 Ehrlich, P., and Hata, S. Die experimentelle Chemotherapie der Spirillose, Berlin, Julius Springer, 1910

2 Fournieu, E. Sur l'emploi de l'acide oxvaminophenylarsinique et des acides arylarsiniques en general dans le traitement des spirilloses et des trypanosomiasis, *Ann Inst Pasteur* **35** 571-574, 1921

3 (a) Muller, E. Die Spirozidbehandlung der angeborene Syphilis und ihre bisherigen Erfolge, *Arch f Kinderh* **91** 108-124, 1930 (b) Nedelmann, E. Erfahrungen mit der Spirozidbehandlung der Lues congenita, *Jahrb f Kinderh* **134** 89-101, 1932 (c) Gerth, R. Zur Frage der Heilung der kongenitalen Lues des Sauglings mit kleinen Spirociddosen, *Monatschr f Kinderh* **67** 46-58, 1936 (d) Traisman, A. S. Further Observations on the Use of Acetarzone in the Treatment of Congenital Syphilis, *J Pediat* **7** 495-511, 1935

4 Whipple, D. V., and Dunham, E. C. Congenital Syphilis. II. Prevention and Treatment, *J Pediat* **13** 101-119, 1938. This study is the most complete, current review of congenital syphilis available.

5 Rosahn, P. D., and Kemp, J. E. The Oral Administration of Stovarsol in the Treatment of Experimental Syphilis of the Rabbit, *Am J Syph, Gonorr & Ven Dis* **21** 180-198, 1937

6 The Oral Medication of Syphilis, editorial, *Am J Syph, Gonorr & Ven Dis* **21** 456-461, 1937

7 Cole, H. N. The Pharmacopeia and the Physician. The Use of Antisyphilitic Remedies, *J A M A* **107** 2123-2131 (Dec 26) 1936, The Use of Antisyphilitic Remedies, *ibid* **108** 825, (March 6) 1937

8 Traisman, A. S. The Use of Antisyphilitic Remedies, *J A M A* **108** 825 (March 6) 1937

9 Rosenbaum, H. A. Acetarzone in the Treatment of Syphilis, *J A M A* **108** 1280 (April 10) 1937

Cole's criticisms vigorously Clinical experience with acetasone has in this country been largely acquired by pediatricians

The chief objections advanced to acetasone therapy are that (1) the difference between the toxic and the therapeutic dose is so small and the variations in toxicity of various lots of the drug so great as to make the clinical use of acetasone hazardous and unjustifiable, (2) experience with the drug has not yet progressed to a point at which any conclusions concerning its final antisyphilitic effect can be made, and the drug is therefore still experimental and should not be advocated for general use, (3) the results obtained with standard means of treatment are so good, particularly for infants, as to make another medicament superfluous, and (4) in many cases the physician cannot be certain that the drug is actually administered

Among the arguments in favor of acetasone therapy are that (1) the drug is easily administered without the psychic and physical trauma incident to parenteral injections, (2) the effect on the active lesions of syphilis is good, (3) the serologic response is as good as that obtained with "standard" preparations, and (4) the reactions are not ordinarily serious and may be reduced by avoiding excessive doses and discontinuing the drug at the first sign of intolerance

We shall review briefly the chief evidence tending to support or disprove these arguments

Rosahn and Kemp⁵ have well summarized the conflicting evidence concerning the toxicity of acetasone for animals In an effort to obtain further data on this subject with the standard laboratory animal of experimental syphilis, the rabbit, these investigators administered varying doses of commercial acetasone They found that with a dose well within the range used for human beings, 20 mg per kilogram of body weight daily, 4 of 6 rabbits died from the effects of the drug When the dose was reduced to 15 mg per kilogram one group of animals survived, while another group, treated later with the identical drug, showed a mortality of over 50 per cent as a result of acetasone alone

Raiziss¹⁰ stated that he has noted a similar variation in the toxicity of acetasone for rabbits and that his experience at present indicates that the maximum dose tolerated is between 25 and 50 mg per kilogram In recent experiments performed by him, however, he has found that differences in tolerance of acetasone apparently exists in different species, that dogs may be given 100 mg per kilogram of acetasone by mouth for twelve treatments over a period of six weeks and that rats "tolerate 3 to 4 Gm of acetasone by mouth"

It is difficult to come to any conclusions concerning the incidence of toxic reactions to acetasone in man on the basis of published

10 Raiziss, G W Personal communication to the authors

reports Stokes¹¹ has tabulated the wide variety of untoward effects, and Whipple and Dunham⁴ stated that 7 deaths directly attributable to the drug have occurred in over 1,000 recorded cases in which it was used

Concerning other objections to the use of acetarsone in the treatment of man, we do not believe that a sufficient number of cases have been observed for adequate periods to justify final conclusions. In a recent study by the Cooperative Clinical Group¹² it has been shown that a patient with late congenital syphilis is subject to the risk of interstitial keratitis until the age of 25. The report also showed that while the incidence of interstitial keratitis is greatly reduced (from 36 to 2 per cent) by a large amount of previous standard treatment with arsphenamine and heavy metal, there remains an irreducible minimum of cases in which this complication will develop when treatment is not begun until the patient is 2 years of age.

The objection that acetarsone therapy may fail to be carried out through lack of cooperation from the parent in the administration of the drug is a real one, to our minds, and we believe that it has not received adequate attention. No study of this factor has been made, and it has deterred some competent workers from using acetarsone.¹³

With the objection that standard agents of treatment are so good for early congenital syphilis as to admit of no indication for a trial of others we are not in agreement. While the treatment of congenital syphilis has been advanced enormously in efficiency during the past two decades, its long-drawn-out course, its sometimes difficult technical requirements and the dangers of reaction involved in all methods represent a status far from perfection. Even with otherwise healthy patients with early infantile syphilis the serologic results with standard preparations are not entirely satisfactory (Smith¹⁴). The residuum of cases of late syphilis with an unsatisfactory outcome is clearly indicated in the study carried out by Cole and his associates.¹²

Of the advantages of acetarsone therapy, the ease of administration has been emphasized in almost all reports. We agree that this may be accepted as a cogent argument provided the clinical results are comparable with those obtained with other preparations. If the effect of

11 Stokes, J. H. *Modern Clinical Syphilology: Diagnosis, Treatment, Case Studies*, ed. 2, Philadelphia, W. B. Saunders Company, 1934.

12 Cole, H. N., Usilton, L. J., Moore, J. E., O'Leary, P. A., Stokes, J. H., Wile, U. J., Parran, F., Jr., and Vonderlehr, R. A. Late Prenatal Syphilis, with Special Reference to Interstitial Keratitis. Its Prevention and Treatment, *Arch. Dermat. & Syph.* **35**: 563-579 (April) 1937.

13 Smith, F. R., Jr. Congenital Syphilis. Results of Treatment in Children, *J. A. M. A.* **105**: 409-412 (Aug. 10) 1935.

14 Smith, F. R., Jr. Congenital Syphilis in Children. Results of Treatment in Five Hundred and Twenty-One Patients, *Am. J. Syph. & Neurol.* **19**: 532-546, 1935; *Am. J. Syph., Gonorr. & Ven. Dis.* **20**: 45-55, 1936.

acetarsones on the course of syphilis is inferior, however, such an argument is highly fallacious, and persistence in such treatment on such grounds can, in our opinion, be regarded only as an evidence of professional indolence.

There can be no question that acetarsones are active antisyphilitic drugs. We have seen no report of failure of mucocutaneous lesions to respond. The rapidity of healing varies somewhat and has been expressed in general terms in most reports. The average is between two and four weeks.¹⁵ The evidence of the effect of acetarsones on acute syphilis of the bone, presented by Traisman^{3d} and by Friedman¹⁶ is convincing and indicates that healing is usually complete after one course (nine weeks with the Bratusch-Marrain system). In an earlier survey¹⁷ we noted a prompt response in 11 cases of syphilis of the bone. Yampolsky,¹⁸ however, has reported rather disappointing results in this regard.

MATERIAL STUDIED

In the present series of 196 patients given varying amounts of acetarsones we believe the diagnosis of syphilis to have been valid for 187. Of this number, 87 have been followed for more than three years since treatment was started, 116 over two years and 145 over one year. Eighty-three per cent of the patients were Negroes. The serologic follow-up has been good, adequate data as to the final status when the patient was last seen are available, and examinations of the spinal fluid have been done in 102 cases after some treatment. The observations on cutaneous lesions were not recorded frequently enough to permit of more than a general impression as to the rapidity with which they disappeared under treatment with acetarsones. The roentgen follow-up of cases of osseous lesions is incomplete. Observation of reactions to treatment was especially careful.

DOSAGE

The scheme of dosage suggested by Maxwell and Glaser^{15b} was followed. For a few young infants the initial dose was reduced one half. In table 1 this system is compared with the widely used schedule suggested by Bratusch-Marrain,¹⁹ in which generally smaller doses based

15 (a) Rosenbaum, H. A. Stovarsol in the Treatment of Syphilis in Infants and in Children, *Am J Dis Child* **44** 25-30 (July) 1932. (b) Maxwell, C. H., and Glaser, J. Treatment of Congenital Syphilis with Acetarsones Given by Mouth, *ibid* **43**:1461-1489 (June) 1932. (c) Baumbach. Ueber Erfahrungen mit der Spirocidkur bei Lues congenita, *Arch f Kinderh* **99** 151-159, 1933. (d) Krombach, K. Beitrag zur Spirocidbehandlung der kongenitalen Sauglingslues, *Klin Wchnschr* **7** 1512-1513, 1928.

16 Friedman, C. F. Acetarsones in the Treatment of Osseous Lesions of Early Congenital Syphilis, *Am J Dis Child* **48** 548-564 (Sept) 1934.

17 Pillsbury, D. M., and Perlman, H. H. The Treatment of Prenatal Syphilis with Acetarsones (Stovarsol). Preliminary Report of Results in Seventy-Three Cases, *Pennsylvania M J* **38** 327-331, 1935.

18 Yampolsky, J. Acetarsones in the Treatment of Syphilis in Negro Children, *Am J Dis Child* **48** 81-100 (July) 1934.

19 Bratusch-Marrain, A. Method and Value of Spirocid Treatment of Syphilis in Childhood, *Arch f Kinderh* **92** 26-39, 1931.

on the patient's weight are given. Neither system has any adequate background of animal experiments, and both were originally advanced on comparatively restricted clinical data. Much larger doses have been used by other clinicians, but data presented later indicate, we believe, that larger doses are unwise.

While the system of Maxwell and Glaser predicates the administration of slightly over three courses of acetarsone yearly, the average received by our patients was not over two. The patients were given a supply of acetarsone sufficient for one week at each visit. Weekly urinalysis was required.

Blood for a Kolmer-Wassermann and for a Kahn test was taken at the beginning and end of each course of treatment. In general, when a completely negative reaction was obtained one more course of acetarsone was given and treatment then discontinued provided no evidence of clinical or serologic relapse was noted.

TABLE 1—*Comparative Schedules of Dosage of Acetarsone*

Maxwell and Glaser			Bratusch Marrain		
Period of Treatment, Weeks	Dose in Tablets (0.25 Gm Each)	Times Daily	Period of Treatment, Weeks	Dose, Mg per Kg of Body Weight	Times Daily
1	$\frac{1}{4}$	1	1	5	1
1	$\frac{1}{4}$	2	1	10	1
1	$\frac{1}{4}$	3	1	15	1
1	$\frac{1}{4}$	4	6	20	1
1	$\frac{1}{2}$	3			
1	$\frac{1}{2}$	4			
1	$\frac{1}{2}$	2			
Total 14 Gm in 49 days Rest period, 6 weeks			Total Approximately 1 Gm per Kg in 63 days Rest period, 4 to 6 weeks		

Some selection of the patients for acetarsone therapy was exercised. It had previously been our policy when using standard measures not to employ arsphenamine initially for weak premature infants, for children severely ill as a result of syphilis or for patients suffering from an active syphilitic lesion of a vital organ. This is, of course, simply the application of a well established rule for the treatment of adult syphilis. One of us (D. M. P.) has seen 2 toxic syphilitic infants die promptly as a result of the too early use of arsphenamine. We have followed a cautious policy in the initial use of acetarsone for such patients.

When a child was started on acetarsone therapy we have, as consistently as possible in the best interests of the patient, given the drug alone. While it would theoretically be of advantage to alternate acetarsone with a heavy metal, we did not see how any accurate evaluation of acetarsone itself could be made in this way.

CLINICAL EFFECTS

The disappearance of spirochetes from cutaneous lesions has been followed daily in only 3 cases. No spirochetes were found at the end of

seventy-two, ninety-six and one hundred and twenty hours, respectively. In general, cutaneous lesions required between three and four weeks of treatment before complete disappearance occurred. The lowest recorded time for complete involution was two weeks. In a case in which acetarsone was discontinued after one week because of vomiting, relapse of the cutaneous lesions occurred. In another case a syphilid appeared for the first time after two weeks of treatment. Further treatment with the usual increasing dose caused involution, and the ultimate clinical outcome was entirely satisfactory.

In general, we should regard the effect of acetarsone on infectious lesions as distinctly slower than that of arsphenamine and certainly no more rapid than that of an insoluble bismuth salt. Wright²⁰ noted disappearance of cutaneous lesions in 3 cases forty-eight hours after an injection of a bismuth preparation had been given.

The satisfactory disappearance of osseous lesions as shown by roentgen examination after one course of treatment in 11 cases has been recorded in a previous paper.¹⁷ In 2 cases of Clutton's joints involution was satisfactory.

The effect of acetarsone on interstitial keratitis in our series has been disappointing. The response of this lesion to any form of treatment is capricious, and our series was small. However, in 5 cases the course of the active lesion was prolonged, and involvement of the other eye was not prevented. In 3 cases marked corneal nebulas and significant decrease in vision were noted as the end result.

We have encountered no case of late clinical relapse after acetarsone was given. Clinical progression of the disease in spite of treatment has occurred in 8 cases.

One death occurred in a premature infant one month after acetarsone had been discontinued because of acute hemorrhagic nephritis which cleared up in one week. The patient was removed from the hospital against the resident physician's advice. We are unable to state positively whether the administration of acetarsone contributed to the child's death. We believe that it did not.

EFFECT OF ACETARSONE ALONE ON WASSERMANN AND KAHN REACTIONS OF BLOOD

In table 2 is summarized the effect of acetarsone therapy alone on the Wassermann and the Kahn reaction of the blood. The results have been set down in relation to age and amount of treatment given. Serologic negativity was not considered to have been obtained until the reaction to both antigens was completely negative. It was an almost invariable rule that when the time for serologic reversal was prolonged, the

²⁰ Wright, C. S. Bismuth in the Treatment of Congenital Syphilis, *J. A. M. A.* 89:424-428 (Aug. 6) 1927.

Wassermann (Kolmer) reaction became negative before the Kahn reaction did so. This was not true for many children under 1 year of age, in whom complete serologic reversal frequently occurs after one course of treatment.

It is noted that among children under 6 months the percentage of serologic reversal was 70. In Smith's¹⁴ series of patients treated with arsphenamine and heavy metal the incidence of serologic reversal when treatment was begun before the age of 6 months and given regularly during the first year was 94.2 per cent. If treatment was intermittent, the percentage was reduced to approximately 80, and if very irregular, to 70. On the basis of our relatively small number of patients in this age range, the percentage of serologic reversal is lower after acetarsone therapy than after regular intensive treatment with arsphenamine and a bismuth preparation. The number of serologic reversals would prob-

TABLE 2—*Effect of Acetarsone Alone on Wassermann and Kahn Reactions of Blood*

	Number of Cases	Final Wassermann and Kahn Tests	
		Positive	Negative
Patient under 6 months of age			
1 to 3 courses of acetarsone	20	5	15
4 or more courses	10	4	6
Totals	30	9 (30%)	21 (70%)
Patient over 6 months of age			
1 to 3 courses of acetarsone	62	44	18
4 or more courses	43	23	20
Totals	105	67 (64%)	38 (36%)

ably have been increased by more prolonged treatment in the 5 cases in which fewer than three courses of acetarsone were given, but the percentage would even then not have equaled that obtained by Smith. Whipple and Dunham⁴ have collected the various reports of the effect of standard treatment on infants and found that the incidence of clinical and serologic cure varies from 59 to 97 per cent. They have also stated that although the use of sulfarsphenamine has received the unqualified endorsement of the Cooperative Clinical Group,²¹ reports of the results of its use are few and not entirely satisfactory.

In the age group over 6 months a strikingly lower percentage of serologic reversal was noted—only 36 per cent as compared to the 70 per cent reversal observed among infants under 6 months. This is in accord with the reports of many observers of cases in which standard methods were used. Smith found the percentage of serologic reversal among patients over 2 years of age to be only 29 per cent.

²¹ Moore, J. E., and others. Management of Syphilis in General Practice, to be published.

To 47 of our patients arsphenamine and a bismuth or mercury compound were also given. In most of the cases administration of acetarsone followed the other types of therapy. Of 7 patients for whom treatment was started before the age of 6 months, all became seronegative. Of those who received a large amount (over twenty injections) of arsphenamine and a bismuth preparation, there were a considerable number who had given evidence of fixed seropositivity before we began our study of acetarsone (table 3).

Of the 196 patients who received some acetarsone, 21 had some type of reaction, an incidence of 10.7 per cent (table 4).

TABLE 3—*Effect of Combined "Standard" and Acetarsone Therapy on Wassermann and Kahn Reactions of Blood*

	Number of Cases	Final Wassermann and Kahn Tests	
		Positive	Negative
Little arsphenamine or bismuth medication plus acetarsone	20	15	5 (25%)
Much* arsphenamine or bismuth medication plus acetarsone	27	13	14 (52%)
Total	47	28	19 (40%)
Same group tabulated as to age			
Under 6 months when treated	7	0	7 (100%)
Over 6 months	40	28	12 (30%)
	47	28	19

* "Much" arsphenamine or bismuth medication indicates over twenty injections.

TABLE 4—*Reactions to Acetarsone*

Total number of patients receiving drug	196
Total reactions	21 (10.7%)
Nephritis	8
Gastrointestinal disturbance	7
Mild dermatitis	3
Gastrointestinal disturbance and dermatitis	1
Fixed eruption	1
Severe peripheral neuritis, hepatitis and dermatitis	1
Number of reactions causing permanent discontinuance of acetarsone therapy	10

REACTIONS TO ACETARSONE

We regarded all the nephritic reactions in which the presence of blood cells, casts and significantly increased albumin in the urine was the basis of diagnosis as sufficient contraindication to further attempts at acetarsone therapy. This view is not shared by some observers.^{3a} The dermatitic reactions were all mild and not of sufficient severity to interdict therapy.

The most severe reaction occurred in a Negress aged 1 year, who had generalized dermatitis with a temperature of 104 F after four weeks of treatment. During this time the scheduled dose was 4.2 Gm. Under the Bratusch-Marrain schedule the directed dose would have been 2.6 Gm. The patient was admitted to the hospital, marked hepatic enlargement was soon noted, and paralysis of the left external rectus muscle

absence of knee and ankle jerks and bilateral foot and wrist drop developed. Definite improvement occurred within two weeks.

The number of reactions occurring in patients treated in the hospital and as outpatients revealed an interesting difference (table 5). We desired information on this point primarily to determine whether or not the prescribed drug was administered as directed to outpatients. It was known that patients treated in the ward received full, accurate doses, we had and still have doubt that such was the case when treatment was administered by the parents. It was found that the incidence of reaction in the hospital was almost four times that in the clinic (31.8 per cent as compared to 8 per cent). We were unable to explain this on the basis of any other illnesses from which the ward patients might be suffering or of the slightly lower age level of these children.

EXAMINATIONS OF SPINAL FLUID

Examination of the spinal fluid of 102 patients were made, the standard procedures of cell count, globulin determination, Wassermann test

TABLE 5—*Incidence of Reactions in Patients Treated in Wards (Drug Known to be Administered) and in Outpatients (Administration Uncertain)*

Patients receiving acetarsone in ward	22
Number of reactions	7 (31.8%)
Patients receiving acetarsone at home	174
Number of reactions	14 (8%)

and colloidal gold test being carried out. The spinal fluid of 2 of these patients was abnormal, that of 1 showing the "paretic" formula (characteristic of dementia paralytica), with no clinical signs, and that of the other a tabetic curve, with definite clinical evidence of juvenile tabes. In 2 other patients signs of neurosyphilis were present. One of these was reported to have had a positive Wassermann reaction of the spinal fluid previously, the other had not been tested. Of the total of 187 patients with congenital syphilis, therefore, 4 had undoubted evidence of neurosyphilis, but data on the spinal fluid are not available for 84 of these. Excluding their cases, we find that the incidence of neurosyphilis in our series was slightly under 4 per cent.

DETERMINATION OF ARSENIC IN URINE

In an effort to determine the value of routine qualitative tests for arsenic as evidence of whether the patient was receiving acetarsone, a large number of tests by Gutzeit's and by Reinsch's method were done. Occasional positive reactions were obtained, but the procedures proved of no clinical value. Negative reactions were reported for most of the patients definitely known to be receiving acetarsone. No determinations on specimens of the stool were done.

COMPARATIVE ATTENDANCE OF PATIENTS RECEIVING INJECTION
THERAPY AND THOSE RECEIVING ACETARSONE

The ratio of the actual to the expected attendance of patients at the clinic, whether for treatment or reexamination, was determined for the year 1930, when all patients were receiving treatment by injection. This was compared with the reports of the social service department, submitted monthly during the past three years, and with a survey made during the first year acetarsone was used. The attendance of patients given injection therapy was 51 per cent of that expected. During the first year of acetarsone therapy it was 69 per cent, but during the past three years the average has been 51 per cent, with a monthly variation of 33 to 74 per cent. The attendance ratio always fell during the summer months (average, 40 per cent) and during inclement weather (33 per cent in January 1937). Possibly the initial high attendance was incident to the enthusiasm of the staff and the social service department over a

TABLE 6—*Basis of Diagnosis in Cases of Syphilis Recognized Within One Month after Entrance into Hospital*

Total number of cases in which syphilis was diagnosed without delay	100
Diagnosed by*	
Routine serologic study	60
Cutaneous lesions	19
Snuffles	6
Roentgenograms of bones	9
Changes in the central nervous system	4
Gross lesions of bones	2
Interstitial keratitis	3
Pseudoparalysis of Parrot, acquired syphilis, facies, Clutton's joints	1 each

* Four of the patients presented two obvious lesions

new form of treatment or to fear of its possible dangers. At that time, also, the drug was being supplied free by the manufacturer, but some fall in attendance was noted while this was still the case. In any event, the percentage attendance of patients receiving injection therapy and acetarsone, respectively, has been exactly the same, 51 per cent.

LAG IN THE DIAGNOSIS OF SYPHILIS IN PEDIATRIC PRACTICE

As has been stated, of our series of 187 cases of congenital syphilis the disease was not recognized in 87 after the initial examination in the outpatient department. The average delay in arriving at the diagnosis in these cases was three years. The extreme occurred in a patient admitted to the outpatient department at the age of 1 month, the diagnosis of congenital syphilis was not made until the end of the pediatric age period, 12 years.

In table 6 we have summarized the essential data on the cases in which the diagnosis of syphilis was made within one month after admission to the clinic. Of 100 cases, the diagnosis was arrived at on the basis of a serologic test in 60. In 40 per cent some frank lesion of

syphilis was present. With the exception of changes in the bones, determinable only by roentgen study, the lesions due to syphilis were so prominent that even a cursory examination was sufficient to reveal them. The incidence of latency, 60 per cent, is slightly higher than in an earlier, unpublished survey by Perlman²² of cases from our clinic, in which he found it to be 50 per cent.

The data on cases in which the diagnosis was not made within one month after registration are summarized in tables 7 and 8. It is noted that of 40 patients admitted to the clinic before the age of 1 year the diagnosis was not made before the first birthday for 25. These patients had been deprived of the major portion of their chance for cure, as the effectiveness of any system of treatment is greatly lowered after the

TABLE 7—*Lag in Diagnosis in Clinical Pediatric Syphilology*

Number of cases in which diagnosis was delayed	87
Average time until syphilis was detected	3 years
Number of patients under the age of 1 year when registered	40
Number of patients over the age of 1 year when registered	47

TABLE 8—*Active Congenital Syphilis Developing Under Medical Supervision*

Total number of cases	87
Total years of untreated congenital syphilis	263.7
Cases in which diagnosis was made by serologic study	65
Number of patients in whom lesions of syphilis developed after entrance into clinic	22
Types of lesions	
Cutaneous	5
Osseous	
Roentgen changes alone	3
Gross changes	2
Snuffles	2
Persistent lymphadenopathy	2
Interstitial keratitis	2
Chorioretinitis, Clutton's joints, Hutchinson's incisors, paroxysmal hemoglobinuria	1 each

age of 1 year. In table 8 it is seen that 22 of 87 patients had frank or highly suggestive lesions of syphilis during an average period of three years before the diagnosis was made. In 4 cases permanent and irremediable disability resulted in large part from failure to make the diagnosis of syphilis at the time of admission.

A review of the records in these cases showed that for all but a few patients the initial physical examination had been adequate. In 4 cases there was suggestive evidence of syphilis, but the original findings in this regard were apparently disregarded. A considerable number of records had the notation "Return for Wassermann", the patient did not return as directed. It was apparent that in well over 90 per cent of cases the diagnosis was not established because of the physician's failure to do a routine Wassermann test of the blood on the first visit.

22 Perlman, H. H. Unpublished data.

In only 1 case in which the initial Wassermann reaction was negative was evidence of the disease noted subsequently

Our material furnished evidence that the diagnosis of congenital syphilis will be missed in at least 6 of 10 cases unless a serologic test is performed. Also, after the doubtful period of early infancy is passed, the serologic evidence becomes certain, and in few cases will the diagnosis fail to be made when modern antigens are used in the serologic study

COMMENT

It has been shown that the data concerning the toxicity of acetarsone for animals are conflicting and that animal experiments cannot be used as a basis for establishing the nontoxic dose for man or for determining the spirocheticidal power and toxicity of various lots of the drug produced commercially. This is in marked contrast to the control which is exercisable in the case of arsphenamine compounds. It is possible that marked differences in tolerance exist in different species, and that the toxicity of the drug for rabbits is not a final argument against its use for man.

Some confusion concerning the necessary and safe dose for man exists. It is probable that the system suggested by Bratusch-Marrain, which is most widely used at present, is the best available, since it affords enough acetarsone to be effective on clinical lesions of syphilis, and the initial doses are low and based on the weight of the patient. That this will not completely obviate reactions, however, is certain from the recorded experience, and we have seen 7 reactions in which the dose, had it been based on weight, would have exceeded those prescribed. It is possible that smaller doses will suffice for antisyphilitic effect, and we believe that the question should have further study.

Our experience would indicate that most reactions to acetarsone are due to the pure toxic effect and not to any allergic sensitivity as in the case of an exfoliative dermatitis following use of arsphenamine. We have not performed any cutaneous tests. In the majority of cases the drug may be administered after a reaction without adverse effect. When a severe reaction has developed, e. g., nephritis, neuritis or hepatitis, we have not felt justified in resuming acetarsone therapy. While it has been stated that a nephritic reaction is no contraindication to further acetarsone therapy after the urine has become normal, we do not believe that one is justified in assuming that no change of possible future significance to the patient has occurred.

We are not convinced that even the smaller doses employed by many observers are not unnecessarily large. This is indicated by the good clinical results we have seen in patients whose attendance was irregular and to whom the prescribed doses were probably not given faithfully at home. All in all, we cannot escape the feeling that, without a signifi-

cant series of cases in which treatment throughout is under controlled conditions, with absolute assurance that the doses of acetarsone are administered as directed, figures concerning the proper dose and toxicity for human beings must be regarded as tentative and subject to question

The much higher incidence of reaction among patients treated in the wards of the hospital, four times that observed among outpatients, seems a strong indication that treatment in the home is not carried out as directed. Our social service workers emphasized the necessity of regular treatment during visits to the patient's home, but this does not constitute anything approaching full control

The lessened difficulty of conducting a clinic for the treatment of congenital syphilis when acetarsone is used is considerable. Venipuncture is necessary only at intervals of weeks, and the physician's calm need be interrupted only by questioning of the mother and examination of the patient for reactions. We cannot but feel, however, that a specter is always present—that the entrusting of treatment to a prescription blank may shift the responsibility for treatment of an entirely helpless and dependent child to the hands of an irresponsible parent or guardian. It is true that one can sense the irresponsible parent quickly, and we believe that he is an absolute contraindication to further acetarsone therapy. The child with congenital syphilis has already paid too great a price for the irresponsibility of one of his parents, no more should be expected of him.

From the clinical results obtained it is evident that a majority of parents realize the necessity of cooperation. The effect of the drug on evident gross lesions of syphilis is good. Acetarsone has a definitely less rapid action than arsphenamine on cutaneous lesions and possibly approaches that of an insoluble bismuth compound. It does not remove the hazard of infectiousness in an infant with congenital syphilis as rapidly as does arsphenamine or a soluble bismuth compound. The percentage of serologic reversals among patients whose treatment was started before 6 months of age was less than that reported by Smith¹⁴ in the most adequately studied series available. However, further treatment in some of our cases and observation for a longer period may reduce the number of seropositive patients in this age group. The results in this regard are better than in some series in which standard preparations were used. The burden of proof would seem to rest on the collection of larger series of cases followed for longer periods after acetarsone therapy. That the percentage of Wassermann-fastness is significant from the standpoint of relapsing lesions in patients with early congenital syphilis is well shown by Smith's material.

In cases of late congenital syphilis (in patients over 2 years of age) the percentage of Wassermann-fastness, 67, was less than that reported by Smith. In the series of Cole and his associates¹² 53.9 per cent of

patients presenting latent syphilis on admission showed a fixed positive Wassermann reaction of the blood. Those authors showed that in the presence of active late syphilitic lesions the presence of a fixed positive reaction of the blood does not justify as good a prognosis in regard to the ultimate clinical outcome as does a more labile reaction. In late latent congenital syphilis their findings indicate that seropositivity has no bearing on the final clinical outcome, provided adequate treatment is given.

We have encountered 8 cases (5 of interstitial keratitis and 3 of neurosyphilis) in which the outcome thus far has been unsatisfactory. Two cutaneous relapses were noted in cases of early syphilis. Only 1 late serologic relapse has been seen. In cases of latent syphilis and in cases in which the initial response to acetarsones was good, not a single serious clinical relapse has occurred. This is in marked contrast to the results observed in the group of 87 cases in which no treatment was given and in which 22 clinical relapses occurred during an average period of three years.

The high proportion of latency in our cases is sufficient indication of the complete inadequacy of physical examination as a means of ruling out congenital syphilis. Routine serologic tests are carried out in the pediatric department in comparatively few hospitals; they are an absolute essential to an adequate study. They are particularly important for infants, in whom the cure of syphilis almost always can be accomplished. For newborn infants roentgen studies are also essential.²³ It is true that venipuncture in infants may be difficult and time consuming, but its performance, according to our experience, will make the prolonged treatment and observation of late congenital syphilis unnecessary in most cases. Conflicting serologic findings will undoubtedly be encountered, but adequate collateral study, particularly roentgen study of the long bones, will ordinarily establish the presence or absence of syphilis. The problem of serologic interpretation in the treatment of newborn children has been well discussed by Ingraham²⁴ and by Faber and Black.²⁵ The latter writers have shown in a small series of cases that reagin in the blood of newborn infants is in some cases simply carried over from the maternal circulation and is not evidence of syphilitic infection of the infant. In cases of syphilis with a positive Wassermann reaction active syphilis is indicated by an increase in reagin. The absence of

23 Parmelee, A. H., and Halpern, L. J. The Diagnosis of Congenital Syphilis, *J. A. M. A.* **105** 563-566 (Aug. 24) 1935.

24 Ingraham, N. R., Jr. The Diagnosis of Infantile Congenital Syphilis During the Period of Doubt, *Am. J. Syph. & Neurol.* **19** 547-580, 1935.

25 Faber, H. K., and Black, W. C. Quantitative Wassermann Tests in the Diagnosis of Congenital Syphilis. The Clinical Importance of Fildes' Law, *Am. J. Dis. Child.* **51**:1257-1267 (June) 1936.

syphilis will be shown by a decrease in reagin, with spontaneous reversion of the Wassermann reaction to negative

SUMMARY AND CONCLUSIONS

1 Acetarsons by mouth is an active antisyphilitic agent

2 Its action is less rapid than that of arsphenamine

3 No adequate experimental background for determination of the toxicity and spirocheticidal effect of individual lots of acetarsone is available

4 In our cases the effect of acetarsone alone in reversing the Wassermann and the Kahn reaction of the blood has been only moderately satisfactory for infants under 6 months of age but as good as that of standard preparations, or better, for patients over this age

5 The incidence of all reactions has been 107 per cent, that of serious reactions, particularly nephritis, 46 per cent

6 For newborn infants the use of a system of dosage based on weight is essential, reactions are reduced but not entirely prevented by this means. The system of Bratusch-Marrain seems the best available

7 Nephritic reactions occurring suddenly and insidiously are the greatest single drawback to acetarsone therapy. We do not believe that administration of the drug should be resumed after such a reaction. In general, the occurrence of gastrointestinal and dermatitic reactions does not contraindicate further acetarsone therapy

8 Acetarsons is probably not administered as directed to patients treated at home. The incidence of reactions among patients treated under controlled conditions in the hospital was four times that observed among outpatients

9 Among 87 cases observed for over three years after acetarsone therapy, 1 instance of serologic relapse of the blood was noted. No instance of clinical relapse of a lesion not present when treatment was started has been observed

10 Of 87 cases under medical observation for an average of three years before antisyphilitic treatment was given, clinical relapse occurred in 22

11 The effect of acetarsone on interstitial keratitis has been poor

12 Regularity of attendance has not been increased by oral therapy as compared to injection

13 The performance of a routine serologic test is an absolute essential of an adequate pediatric study. With newborn infants the serologic data must be evaluated with extreme care, but with older infants and children a repeatedly positive serologic reaction of the blood is unquestionably of serious prognostic import unless treatment is given

14 We believe that evaluation of the responsibility of the parent or guardian is one of the most important features of treatment by mouth and that lack of cooperation by the parent is a sufficient contraindication to acetarsone therapy. The child with congenital syphilis has already paid a sufficient price for the irresponsibility of one of his parents, no more can be expected of him.

15 The effect of acetarsone in arresting congenital syphilis is inferior to that of arsphenamine and bismuth preparations. The incidence of reactions is high, acetarsone cannot be controlled by experimental studies of spirocheticidal action and toxicity in animals, and administration to outpatients is not assured.

16 The performance of a routine Wassermann test of the blood and of a precipitation test are absolutely essential to an adequate pediatric examination.

ABSTRACT OF DISCUSSION

DR HAROLD N. COLE, Cleveland. I think that Dr Pillsbury's contribution is one of the best that has been made to medicine before this section in some time. It is well known how much the detail man is taught to emphasize acetarsone for congenital syphilis. "It is the drug of choice, particularly for infants," "You get better results in congenital syphilis with acetarsone than with any other preparation," and so forth, *ad nauseam*. Certainly Dr Pillsbury did not find all those statements to be true. There is no question that acetarsone is effective against *Spirochaeta pallida*, it may be useful enough even to cure syphilis clinically. However, one must always remember that one is treating the patient as well as the syphilis, and when reactions occur in about 30 per cent of cases, many of them very severe (nephritis in as many as 4 per cent), one should certainly think twice before using that preparation further.

I question whether there is a place in medicine today for acetarsone unless there is an enormous improvement in it. Too many other remedies that may be used with comparative safety will give even better results.

DR C. C. DENNIE, Kansas City, Mo. I have had an opportunity in the last two years to go over the entire literature on acetarsone therapy, and I have been struck by the fact that there is much variation in the reports of different investigators.

I have used acetarsone only to see what actually happened in cases of acute early congenital syphilis. On reviewing the literature I came to the conclusion that acetarsone is a dangerous drug, is not therapeutically as efficient as neoarsphenamine and has no place in the treatment of either congenital or acquired syphilis. Any drug that causes as many reactions as this one does should be discarded.

It was used, of course, because it could be administered orally.

Some foreign investigators have reported as many reactions as have been reported here today, but a number of them have reported reactions of the central nervous system and effects on the hemopoietic system.

DR G. V. KULCHAR, San Francisco. Acetarsone, like the recently revived arsenoxide, is a drug originally discarded by Ehrlich which I think deserves further investigation. Its spirocheticidal action and its effect on lesions, one gathers from

the literature (particularly from its most enthusiastic proponent, Oppenheim), are almost as rapid as those of the arsphenamines, though its effect on the Wassermann reaction is less marked

Except in a few instances it should not be used for early syphilis. With present means of treatment, according to the statistics of the Cooperative Clinical Group, one can expect 85 per cent or so of good results, acetarsones, therefore, has no place, except perhaps for the occasional patient who is traveling and unable to receive arsphenamine or perhaps for one who cannot tolerate other arsenicals.

The chief objection to acetarsones is that the difference between the toxic and the therapeutic dose is too small. Rosahn and Kemp have studied this experimentally with rabbits. They found that the drug in therapeutic doses was lethal. There was, however, a wide variation in susceptibility, which they were unable to interpret except perhaps on the basis of wide variation in toxicity of the drug in the same batch or perhaps of variation in the susceptibility of rabbits to the drug. It is known that the rabbit is not always a satisfactory animal for the testing of preparations to be administered orally. Kemp and Rosahn (*Am J Syph, Gonorr & Ven Dis* 20 131, 1936) have shown that changes in the gastric secretions of rabbits sometimes introduce variable factors into the experiment.

Acetarsones seems to be able to penetrate the central nervous system. Raiziss in the United States has shown this, and there have been enthusiastic reports of the use of acetarsones in the treatment of syphilis of the central nervous system. This deserves further investigation.

The reactions following acetarsones therapy have been mild. Except for the nephritis mentioned today, they have been mostly dermatitic. The most serious reactions have been those involving the nervous system. These are fortunately rare.

Before acetarsones is discarded it certainly should be investigated further, particularly in the laboratory.

DR W. RAY JONES, Seattle. In Seattle an enthusiastic physician conceived the idea of protecting the health of the public by dosing prostitutes with acetarsones so that they would not disseminate syphilis. He is succeeding admirably. He put some out of business by intoxicating them with acetarsones, and they came to my clinic. Being incapacitated from the effect of the drug, they could not ply their trade, hence they are not disseminating syphilis.

DR DONALD M. PILLSBURY, Philadelphia. Practically all of the fifty or more published reports on the use of acetarsones for congenital syphilis since Fournier revived the drug in 1921 have been favorable. However, Whipple and Dunham in their recent governmental survey of the subject (and they made this survey, I think, from the pediatric point of view) have stated that in only four of the aforementioned reports were the number of cases and the period of observation sufficient to justify any conclusions.

One finds in almost all these reports the argument that acetarsones should be used because it can be given by mouth. I believe that this is a valid argument only if the clinical results compare with those of standard medicaments. It is certainly much more pleasant to run a clinic for congenital syphilis when treatment is given by mouth. We do not think, however, that our results justify its routine use.

BLOOD URTICARIA

INCLUDING A CONTRIBUTION ON METALLERGIC GENESIS
OF COLD URTICARIA

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AND

SOLOMON GREENBERG, M D
NEW YORK

A review of the literature reveals no report of a case of urticaria due to the ingestion of blood or blood-containing foods. A recent article considered the use of animal blood for the nutrition of the German people within the scope of the second four year plan. The investigation of the findings in the following reported case is of especial interest because not only (1) is it the first such case to be reported in the literature indicating that the use of animal blood in the diet is not without its dangers but (2) it was during the nutritional allergic state of the patient that cold urticaria developed.

REPORT OF CASE

W L, 40 years old, a helper in a milk concern, was admitted to the hospital complaining of urticaria. He had had measles as a child, malaria in 1917 and again in 1931 and typhoid fever in 1918, he had complained of recurring pains in the joints since the spring of 1937. He had heartburn after meals and was easily excited. The attacks of urticaria began in November 1937 and usually occurred after meals. The patient received ephedrine pills and about nine injections of calcium and felt improved. On Dec 26, 1937, urticaria developed after he ate what he knew definitely to have been blood sausage. (Blood sausage is made of pork, a large proportion of pork blood, bread and pepper.)

The patient was medium sized, muscular and well nourished, with an enlarged but painless spleen. Examination of the tonsils, roentgen study of the sinuses, teeth and chest and the Wassermann test gave negative results.

After twenty-four hours on a meat-free diet in the hospital the patient was free of symptoms. About four hours after he was given blood sausage urticaria

From the University of Pennsylvania, Clinic of Cutaneous Medicine, director, Dr John H Stokes (Dr Urbach), the Skin and Cancer Unit of the New York Post-Graduate Medical School and Hospital, Executive Officer, Dr George M MacKee (Dr Greenberg), and the Universitätskinderklinik der Charité, Director, Prof G Bessau (Dr Linneweh)

1 Footnote deleted on proof

involved a large part of the body. When placed on a meat-free diet he again showed objective and subjective improvement. In the following days separate additions of fish, beef, veal, pork, bread and pepper to the diet did not cause any outbreak. On January 10, three hours after he had had a lunch of roast blood sausage urticarial wheals appeared on the shoulders and forearms. After he washed his face and body with cold water that evening urticaria developed on the parts washed (the first time urticaria appeared after the use of cold water) and on those areas of skin which had shown an urticarial reaction some hours before (in other words, a flare-up). The next day, when he had not been fed blood sausage and was free of symptoms the patient washed with cold water and no urticaria resulted. Some days later, after he had eaten only roast pig blood urticaria appeared in about three quarters of an hour in the region of the chest, back and face. Washing with cold water at this time resulted in more marked urticaria at the places which came into contact with the water, as on the first occasion. The patient's stomach was washed, and in about one-half hour the urticaria disappeared. The patient left the hospital, so that further investigation was not possible.

Summary—A case is reported of urticaria following the ingestion of blood sausage (made of pork, a large proportion of pork blood, bread and pepper). Separate investigation of the individual ingredients of the blood sausage showed that the roast pork blood was the only cause of the urticaria. Further analysis to determine which part of the blood (the protein, hemoglobin, etc.), roasted or raw, was the ultimate cause and whether other animal or human blood would have caused the same manifestations was unfortunately not possible, since the patient left the hospital. It was observed that only after the development of the nutritional allergic state did urticaria follow the use of cold water.

COMMENT

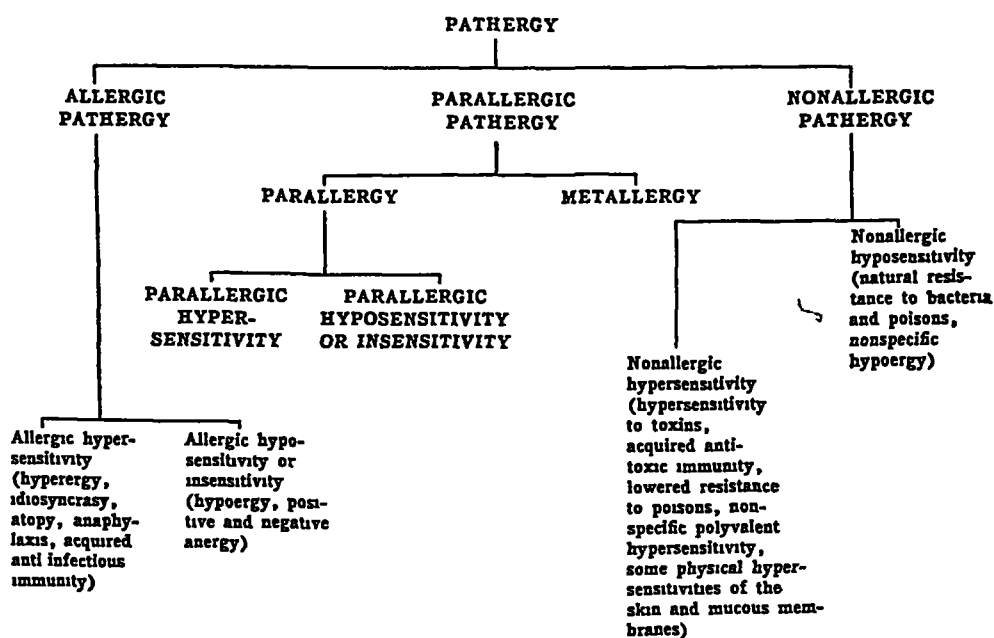
1 The first manifestation—urticaria due to the ingestion of a particular food, in this case roast pork blood—is generally understood and requires no further explanation, but the second manifestation—the development of cold allergy only during the time of an existing allergic state in the body—is of great interest and requires additional comment. We should like to suggest a possible explanation for this phenomenon, and for this purpose we must recall the conceptions of parallergy and metallergy.

By parallergy Moro and Keller² designated the condition of an organism which during the development of an allergy or in the time of allergic oscillations reacts in general more quickly and easily to other irritations than does a nonallergic organism. The allergic reactions caused by the second antigen are clinically different from those produced by the first. Examples are (1) the positive tuberculin reaction at the height of vaccinia in a patient whose reaction had formerly been negative, (2) the vaccinal sore throat on the ninth or tenth day after vac-

2 Moro, E. *Monatschr f Kinderh* **34** 193, 1926. Keller, W. *Deutsche med Wchnschr* **54** 307 and 345, 1928. Moro, E., and Keller, W. *Klin Wchnschr* **14** 1, 1935.

cination, (3) the accompanying sore throat between the seventh and the ninth day after injection of serum, (4) the vaccinal encephalitis which develops nine to twelve days after vaccination, (5) the erythema nodosum of children, which appears about seven weeks after tuberculous infection, at the time of the change from the preallergic to the allergic state and (6) the phlyctenulas which develop after grip or measles

The term metallergy was used by Urbach³ to denote the susceptibility of an organism which has been specifically allergized to one substance to the production by other substances of the same clinical picture. Examples are (1) the positive cutaneous reaction of a tuberculous person to the local introduction not only of tuberculin, but of horse



Subdivision and nomenclature of the allergic reactivities (Urbach)

serum or bouillon, (2) the flare-up of the sites of injections of old tuberculin or luetin following injections of milk, or ultraviolet irradiation, (3) the sensitivity to a hitherto unused protein of a rabbit previously given injections of three or four other proteins at five day intervals

The basic differences between the conceptions of parallergy and metallergy are therefore as follows 1 In parallergy there are different and in metallergy the same clinical appearances 2 Whereas in parallergy a flare-up effect is impossible because the phenomena never occur at the place of the primary allergic reaction, in metallergy a large part of the reaction is based on a flare-up mechanism 3 Parallergy occurs only at the time of allergic development or great fluctuation, whereas

3 Urbach, E. Klinik und Therapie der allergischen Krankheiten, Vienna, Wilhelm Maudrich, 1935

metallergy can accompany but does not require a momentary strong allergic reaction—in other words, is more or less independent of the allergic state momentarily present 4 The parallergic condition can never be called forth a second time, while the metallergic state by means of the mechanism of haptenization may originate often and lead in time to a polyvalent nonspecific pathergy

The chart gives the nomenclature and subdivisions of the allergic reactivities and may bring about a better understanding of the manner in which metallergy and parallergy fit into the system The table presents the differences between metallergy and parallergy

2 On the basis of the conception of "metallergic origin" this case may serve as a bridge between the controversial concepts of the pathogenesis of physical urticaria Two groups of authors have considered the subject, those who adhere to the opinion that cold, heat, light and pressure urticaria have an allergic background and those who deny the

Differences Between Metallergy and Parallergy

Parallergy	Metallergy
Clinical manifestations different from the original reaction	Clinical manifestations the same
Never a flare-up reaction	Often a flare-up reaction
Occurs only during the development of allergy or great allergic oscillations	Occurs independent of the allergic state present
Can never be called forth a second time	Can be called forth often and leads to a polyvalent nonspecific pathergy

allergic basis of these phenomena because they are unable to transfer this kind of hypersensitivity by either the method of Prausnitz and Kustner or that of Konigstein and Urbach Our case may furnish the explanation as follows The "cold" is not the primary allergen, but a secondary allergen induced by the first on the basis of metallergy Every physical or chemical agent, according to the generally approved hapten theory of Landsteiner, may become a hapten if combined with a so-called conjugate protein antigen (*Schlepper-substanz*) In our case the conjugate protein antigen was the pork blood, while the hapten, secondary antigen or metantigen (according to one's choice of nomenclature) was the physical agent "cold" Thus, in a person formerly not sensitive to a physical agent ("cold") urticaria developed on the parts exposed and a flare-up reaction occurred on the areas allergized by food

Further, from our knowledge of similar manifestations, that if a metantigen has worked often as such it may become able to work alone later, producing a so-called conditioned allergic reaction, we may conclude that at some time cold alone will be able to produce urticaria Then, if the body is sufficiently allergized, other irritants of various physical

and chemical natures may play the role of metallergen and slowly a polyvalent nonallergic sensitivity develop. By clinical observation it will be possible often to demonstrate development from allergy to metal-
lergy to haptenization to polyvalent nonallergic pathergy.

SUMMARY AND CONCLUSIONS

A case of urticaria following the ingestion of pork blood sausage is reported. This is believed to be the first case of urticaria following ingestion of blood described in the literature.

Should use of animal blood for nutritional purposes become widespread, more cases of intolerance should be expected.

Cold water urticaria developed during a specific food allergy. The cold water urticaria could be reproduced only after a preceding specific allergic attack.

An attempt is made to explain cold urticaria on the basis of metal-
lergy, thus bridging the gap between the different opinions about the pathogenesis, allergic and nonallergic, of so-called physical urticaria.

Explanation of the terms parallergy and metallergy is given.

CHRONIC RELAPSING URTICARIA AND ANGIONEUROTIC EDEMA

REPORT OF A CASE WITH ASSOCIATED PANCREATIC INSUFFICIENCY
AND RELIEF BY ORAL ADMINISTRATION OF DEINSULINIZED
PANCREATIC EXTRACT

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I am prompted to report a case of the association of cutaneous allergy with pancreatic insufficiency, since a search of medical literature reveals little mention of this unusual syndrome

REPORT OF CASE

G S, a white woman aged 51, presented a generalized eruption consisting of whitish and pinkish wheals, accompanied with itching and burning. The onset was on Aug 20, 1937, and she attributed it to her menopause. The past history revealed nothing significant except a severe attack of mumps at the age of 35. Her recovery was complicated by a peculiar "swelling sensation" across the small of the back, repeated attacks of indigestion and occasional attacks of diarrhea following ingestion of cream or a fatty meal. For the past year she has received hypodermic injections of epinephrine hydrochloride for attacks of angioneurotic edema affecting the lips, tongue and pharyngeal mucous membrane and associated with a generalized urticarial eruption. These attacks did not follow ingestion of sea food, liver, tomato or strawberries. The outbreaks did not appear to be seasonal. Her vitamin intake, including ingestion of citrus fruits,¹ was adequate. There was no history of chronic foci of infection, nor were any discernible on examination. She had never used senna as a laxative.²

Examination—The patient was slender and 65 inches (165 cm) tall and weighed 110 pounds (50 Kg). During an attack of generalized urticaria there was swelling of the lips, tongue and pharynx, producing dysphagia and dysarthria. Examination of the head, neck, chest and abdomen showed nothing abnormal except an ocular refractive error, which was later corrected. The blood pressure was 110 systolic and 70 diastolic. A blood count, a determination of blood sugar and urinalysis gave normal results. The basal metabolic rate was +10 per cent. The Wassermann reaction of the blood was negative. A cholecystogram showed a normal-filling gallbladder, free of infection or calculi. Cutaneous tests with wheat and milk gave positive results, although she had eaten these foods all her

1 Rosenberg, W A Vitamin C Deficiency as a Cause of Urticaria, Arch Dermat & Syph 37 1010 (June) 1938

2 Hollander, L Urticaria Due to Senna Leaves, J A M A 100 1329 (April 29) 1933

life The stools were large, frothy and rancid and on microscopic examination showed free fat in abundance and some undigested meat fibers There were no ova, parasites,³ amebas or tubercle bacilli

Course and Treatment—From Aug 22, 1937, until June 1, 1938, she received treatment of various kinds at different intervals, including elimination of wheat and milk from her diet, Rowe elimination diets, courses of estrone (theelin), splenic extract, calcium and nerve sedative medications and biliary drainage, only to have recurrent outbreaks of urticaria and edema of the lips, tongue and pharynx, which confined her to bed Relief was obtained with saline catharsis, colonic irrigations and hypodermic administration of epinephrine hydrochloride In view of the presence of abundant free fat and some protein fibers in the stool, a prolonged history of indigestion and backache following a severe attack of mumps and the occurrence of occasional attacks of diarrhea following ingestion of cream or a fatty meal, I attributed the eruption to deficient production of steapsin and trypsin enzymes, with incomplete metabolism of lipid and protein, causing an excretion of free fat and absorption of split protein products, which produced cutaneous sensitization Administration of deinsulinized pancreatic extract, 15 grains (0.97 Gm) three times a day after meals, was instituted June 1, 1938, and almost complete relief of symptoms was noticed from June 15 until August 15, at which time medication with pancreatic extract was discontinued On September 1 a fresh outbreak of hives with edema of the oral mucous membranes occurred, and she was confined to bed Treatment with pancreatic extract was resumed and was followed by local and general relief This medication was discontinued on November 23, and a generalized urticarial eruption appeared on November 30, which subsided in three days with oral use of pancreatic extract Great relief of indigestion, absence of diarrhea and of steatorrhea and gain in weight were noted

COMMENT

Deficiency of pancreatic external secretion is best attributed to a complicating pathologic disturbance of the pancreatic acini following mumps, whether it be parenchymatous degeneration, edema or actual inflammation The cause of angioneurotic edema at times is both multiple and complex Finding of the offending allergen and its removal from the environment may offer considerable relief Desensitization with a specific allergen often aids Menagh⁴ described a series of cases in which there was associated infection of the biliary tract and obtained satisfactory results by administration of cholagogues and biliary drainage Absorption of split protein products due to pancreatic disease is akin to absorption of foreign protein (allergen) from other sources and is capable of producing identical allergic reactions, such as urticaria and angioneurotic edema⁵ A history of disease of the alimentary tract, of the biliary tract and of the pancreas should be carefully searched for

3 Endule, E Persistent Angioneurotic Edema, J Allergy 3 583 (Sept) 1932

4 Menagh, F R Etiology and Results of Treatment in Angioneurotic Edema and Urticaria, J A M A 90 668 (March 3) 1928

5 Maddox, A S Angioneurotic Edema, M Rec 11 556 (Dec 16) 1936

SUMMARY

A case of chronic relapsing urticaria with angioneurotic edema associated with pancreatic insufficiency is reported. Oral substitution therapy with desensitized pancreatic extract caused almost total relief of local and general symptoms, which recurred on withdrawal of the medicament.

CRYOTHERAPY FOR ACNE AND ITS SCARS

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AND

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The object of this paper is to report the results of a treatment for acne and its scars not previously presented in the American literature

Solidified carbon dioxide was first used in the treatment of acne by Pusey,¹ in 1907 As early as 1909 Zeisler² wrote, "We have in carbon dioxide snow an exceedingly valuable agent with great further possibilities" In 1913 H Bécclere³ employed a mixture of solid carbon dioxide and acetone in silver tubes with pressure The year before (December 1912), Professor Bordos⁴ presented before the Academy of Science of Paris a similar apparatus, which he named "cryocautery" This seems to be the origin of the term cryotherapy

In 1925 Giraudeau,⁵ at the Hôpital St Louis, commenced using cryotherapy for acne, with a mixture of solid carbon dioxide, acetone and precipitated sulfur, in 1928 he⁶ reported this therapeutic method before the French Society of Dermatology and Syphilology, this work received but passing mention, at the time, in the form of an abstract in the *Archives of Dermatology and Syphilology*⁷ A search of the literature reveals no subsequent mention of cryotherapy per se

From The Skin and Cancer Unit, New York Post-Graduate Medical School and Hospital, Columbia University

1 Pusey, W A The Use of Carbon Dioxid Snow in the Treatment of Nevi and Other Lesions of the Skin A Preliminary Report, J A M A **49** 1354 (Oct 19) 1907

2 Zeisler, J J Cutan Dis **27** 32 (Jan) 1909

3 Bécclère, H Bull Acad de méd, Paris **49** 455 (May 13) 1913

4 Bordos, cited by Jeanselme and Giraudeau Rev gén de clin et de thérap (pt 2) **38**.657 (Oct 11) 1924

5 To the personal knowledge of one of us (F L K) who worked with Dr Giraudeau at the Hôpital St Louis from 1927 to 1936

6 Giraudeau Bull Soc franç de dermat et syph **35** 463 (June 14) 1928

7 Giraudeau Bull Soc franç de dermat et syph **36** 654 (July) 1929, abstracted, Arch Dermat & Syph **21** 308 (Feb) 1930

APPARATUS AND TECHNIC

The apparatus consists of a large clay mortar and pestle, solid carbon dioxide, acetone, precipitated sulfur, absorbent cotton, a square of gauze and a wooden tongue depressor

Approximately 5 ounces (140 Gm) of solid carbon dioxide is placed in a large clay mortar and ground to a fine powder. Acetone (dimethylketone) is carefully added, with constant stirring until a smooth paste is obtained. Then, with a wooden spatula, approximately $\frac{1}{4}$ ounce (7 Gm) of precipitated sulfur is added, until a light yellow mixture is formed. If necessary a few additional drops of acetone may be added.

About one third of the paste is placed on a tampon of absorbent cotton, covered with a square of gauze and applied under moderate pressure to the most prominent lesions.

The tampon is then immersed a second time in the paste. At this stage the addition of a small amount of acetone is usually necessary. The carbon dioxide paste is now applied directly to the skin. The application is made without pressure, and the entire face is covered with rapid friction. The resulting deposit of sulfur is allowed to remain on the face for approximately twenty minutes after the treatment. Immediately after application, erythema and slight edema appear, which last about two or three days and are followed by mild exfoliation of the epidermis. Applications are repeated at weekly intervals.

NOTE—Acetone is inflammable.

THEORY OF ACTION

The acetone serves a triple function. Firstly, it dissolves the sebum, permitting penetration into the follicles, secondly, it seems to increase the speed with which the solid carbon dioxide changes to the gaseous state with consequent further lowering of the temperature, lastly, it produces a more uniform paste.

Some of the sulfur is carried into the follicles, and we believe that the deposited particles exert an inhibitory action on the sebaceous secretion.

The mixture causes superficial refrigeration with subsequent exfoliation. This exfoliation is the result of an inflammatory process, with varying amounts of edema. The therapeutic response is due to the repeated exfoliations.

RESULTS IN FIFTY CASES

Over a period of eighteen months 50 patients with acne and postacne scars were treated by this method. Forty-seven of them were apparently either cured or greatly improved. This represents satisfactory results in 94 per cent of the cases. Two patients failed to respond, and 1 suffered a recurrence.

Thirty-three (66 per cent) were cured or greatly improved within four months. Another fourteen (28 per cent) were equally benefited but required somewhat more than four months of treatment.

The duration of treatment varied from a minimum of six weeks for mild conditions to a maximum of eight months for severe postacne scarring. Four months was the average time required for satisfactory results.

COMMENT

Lest the results of this method of therapy be overestimated or perhaps somewhat misunderstood, we wish to make it clear at the outset that we have not deduced definite conclusions from the 50 cases in which the treatment has thus far been used. We are fully aware that this number is far too small to carry much weight and that the results are to be viewed in the same light as those obtained with superficial roentgen therapy. Our chief aim is to acquaint the dermatologist with another useful weapon against acne and the sequelae of this frequently destructive and disfiguring disease, with the hope that as its use becomes more widely disseminated an improved technic will result.

In this series of cases a few patients that had previously been treated either insufficiently or unsuccessfully by other methods, including roentgen irradiation, were accepted for the therapy, together with those presenting themselves for treatment for the first time in the course of the disease. All patients were given the advice which is routine in cases of acne concerning such matters as diet, general hygienic measures, avoidance of bromides and the use of iodized salt. In the cases in which the condition proved resistant to cryotherapy it had been resistant to roentgen therapy also. A possible explanation for this subornness may be the depth of many of the lesions. However, we observed some cases also in which the condition cleared with this form of treatment although roentgen rays had failed previously. Moreover, patients who had been cured by roentgen therapy showed further cosmetic improvement when cryotherapy was used solely with the aim of rendering the postacne scars and pits less conspicuous. The improvement in these cases may be explained, in all probability, by the fact that the margins of the pits and scars were diminished in sharpness of outline and that circulation was enhanced, with resulting increase in the tonus of the skin.

Our impression at present leads us to believe that cryotherapy deserves particular mention in the local treatment of acne of puberty and prepuberty. Likewise, it has proved to be a useful therapeutic agent for patients who have received maximum roentgen therapy without sufficient clinical improvement.

As is the case with other methods of therapy, one must bear in mind that there may be definite contraindications, and not the least important among them we consider sequelae of irradiation, no matter how mild. Cryotherapy should be guardedly administered when there is atrophy of the skin even when a history of roentgen irradiation cannot

be elicited from the patient. In our opinion another contraindication, perhaps more important than radiodermatitis, is the presence of a melanotic nevus within the affected area or in its immediate vicinity.

Perhaps the most important admonition that we should mention is that one should not seek to set up more than a superficial inflammatory reaction. In our opinion, it is this clinically observed inflammatory process—unfortunately not yet studied histologically—that produces the desired result. We warn against overzealousness of efforts to obtain exfoliation in the treatment of the scars of acne. Mild rather than severe exfoliation should be considered the better choice. We refrained from repeating the process of exfoliation before complete subsidence of the preceding treatment. Cures are reported with considerable reservation, because no case has been observed for a sufficient length of time to warrant considering the cure permanent.

SUMMARY

Fifty patients with acne or postacne scars were treated with a mixture of solid carbon dioxide, acetone and precipitated sulfur.

The technic is described in detail.

Over 90 per cent of the patients were apparently cured or much improved within four months.

In our opinion this form of therapy is particularly valuable for the acne of puberty.

This treatment deserves due consideration in the management of cases in which no response has followed maximum roentgen therapy.

The term "cryotherapy" is used.

SYPHILITIC REAGIN IN BLOOD AND IN SPINAL FLUID

A COMPARATIVE QUANTITATIVE STUDY

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AND

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The purpose of the study reported here was to compare the amount of syphilitic reagin in the serum and in the spinal fluid of patients with neurosyphilis. A number of such studies have already been made, but the results have been inconsistent¹. Whereas, to our best knowledge, all the previous work was done with some variation of the Wassermann technic, one of the flocculation technics, because of their greater simplicity, particularly for quantitative studies, was selected for use in the present investigation. A method which seemed especially suitable for the purpose, because of the clarity of the reactions as well as the relatively small amounts of serum and spinal fluid required, was the Kline test.

The present study differs from previous reported ones also in the greater size of the series studied, namely, a total of 1,245 pairs of serum and spinal fluid. All the specimens tested came from patients at the Brooklyn State Hospital for nervous and mental diseases suspected of having syphilis of the central nervous system.

The subsequent clinical course and the results of the serologic tests demonstrated that a certain number of the patients were actually non-syphilitic, and there were many with dementia paralytica or the tabetic

Aided by a grant from the Committee on Scientific Research of the American Medical Association

From the Office of the Chief Medical Examiner of New York City, and the Laboratories, Brooklyn State Hospital

1 (a) Katzenelbogen, S. Cerebrospinal Fluid and Its Relation to the Blood, Baltimore, Johns Hopkins Press, 1935. (b) Dujardin, B. L'index de perméabilité, *Ann de mal vén* 79:129, 1920. (c) Kafka, V. Atypische serologische Befunde bei Paralyse und ihre Bedeutung, *Ztschr f d ges Neurol. u Psychiat* 56:260, 1920. (d) Auguste, C, and Taboureich, L. Comparaison du taux des réagines syphilitiques dans le sérum et le liquide céphalorachidien, *Compt rend Soc de biol* 127:1314, 1938. (e) Eagle, H. Laboratory Diagnosis of Syphilis, St Louis, C V Mosby Company, 1937, p 329. (This reference contains a complete bibliography.)

form of dementia paralytica whose serologic reactions had become negative under treatment. Patients with cerebrovascular syphilis made up the vast majority of those with a positive reaction of the blood and a negative reaction of the spinal fluid, whereas almost all the patients whose spinal fluid gave a positive reaction were suffering from dementia paralytica or the tabetic form of dementia paralytica. There were only a few instances of congenital syphilis, latent syphilis or simple tabes.

With all specimens the actual tests, both qualitative and quantitative, were performed by one of us (I M D), but in a number of instances, some of which will be described later, tests were carried out by both of us independently.

TECHNIC

When any new patient is admitted to the Brooklyn State Hospital, blood is drawn for a serologic examination. If there are symptoms or signs pointing to syphilis, spinal fluid is drawn at the same time. When there are no such symptoms, if the Wassermann and/or the Kline reaction of the blood prove to be positive, a spinal tap is made on receipt of the report. In the present study, the interval between the examination of the blood and that of the spinal fluid never exceeded two weeks, and in the great majority of cases both specimens were taken simultaneously. Since it is customary in cases of syphilis to repeat the examination at intervals of six months, our findings on 1,245 pairs of specimens of serum and spinal fluid represent tests on a somewhat smaller number of patients.

The serums were separated in the usual manner and then inactivated in a water bath at 56 C for thirty minutes. The vast majority of the spinal fluids were clear and tested directly. Grossly bloody spinal fluids were not used. In the case of microscopically bloody fluids, the cells were removed by centrifuging before the tests were made. All the spinal fluids were tested unheated, since preliminary tests had shown that the titers in the flocculation test were the same with unheated fluids and those heated for periods up to at least an hour.

Each serum and spinal fluid was subjected to preliminary qualitative tests before titrations were carried out. These were the so-called diagnostic and exclusion tests for serum and spinal fluid, carried out in accordance with the original technic described by Kline². It might be mentioned here that the qualitative tests for serum and spinal fluid are carried out differently.

When the qualitative tests were positive the fluids were titrated to ascertain the reagin content³. In order that the results of the tests on serums and spinal fluids might be comparable, the same technic was used for both. The test antigen used was the so-called Kline exclusion emulsion for tests on heated serums.

2 Kline, B S. Microscopic Slide Precipitation Tests for Syphilis, Baltimore. Williams & Wilkins Company, 1932.

3 For a full description of the quantitative flocculation test using the Kline antigen see A S Wiener's article "Studies on the Kline Test for Syphilis," J Lab & Clin Med 22 1062, 1937.

Progressively doubled dilutions of each serum and spinal fluid were prepared, and a drop (0.05 cc) of each dilution was transferred to successive wells of paraffin-ringed slides. A small drop (0.008 cc) of the test emulsion was then added, the slides rotated for four minutes and the reactions read. The reciprocal of the highest dilution of the serum still having a distinct reaction was taken as equal to the number of units of syphilitic reagin present in the serum.

In order to ascertain the limits of accuracy and reproducibility of the quantitative flocculation procedure just described, a number of the specimens were divided and tested independently by both of us in our respective laboratories. In table 1 are given the results of such an experiment. It will be noted that on the whole the agreement was satisfactory. The results would undoubtedly have been still better had it not been for the circumstances under which the tests were carried out. Thus, the specimens were all examined as a matter of routine and in large numbers at one time. For example, frequently as many as 75 serums and 25 spinal fluids were tested in one day, and of these as many as one fifth of the serums

TABLE 1—*Comparison of the Results of Duplicate Quantitative Kline Tests Carried out Independently* to Ascertain Reproducibility*

Specimen	Number of Units of Reagin in			
	Blood Serum		Spinal Fluid	
	D	W	D	W
1	256+	256+	2	1
2	32	16+	8	4
3	0	0	0	0
4	16	16+	0	0
5	128	128	8	8
6	128	128+	4	4
7	32	32	2	2
8	2	2	2	2
9	256	128	4	4
10	2	2	2	2

* By each of us

and half of the spinal fluids gave positive reactions and had to be titrated. Therefore, an occasional small discrepancy, such as that obtained for the spinal fluid specimen 2, is not remarkable. Such apparent differences in the results could be eliminated by repetition of the experiments. Therefore, the method selected for the present study gives readily reproducible results, having a limit of error, as a rule, of no more than one dilution.

RESULTS

In table 2 are listed the results of the tests made in our series by the quantitative technic just described. Each pair of specimens has been classified according to reagin content. Specimens which gave no reaction are classified under the heading "0." Those giving only a doubtful reaction or showing not more than 1 unit of reagin were placed under the heading "0-1." Serums and spinal fluids containing more than 1 and up to and including 2 units of reagin were placed under the heading "1-2." Those of higher titers were classified in a similar manner.

Table 2 presents several interesting features. In the first place, whereas the reagin content of the serum exceeded 64 units in about 5 per cent of the cases and in several instances reached as high as, or even exceeded, 500 units, in no instance did the reagin content of the spinal fluid exceed 16 units. Because of the rarity of cases in which the titer of the reagin was higher in the spinal fluid than in the blood, it seemed of importance to subject them to special scrutiny. Therefore, whenever possible, the tests were repeated, and in practically every instance the original findings were confirmed. During the first half of the studies such tests were not repeated, because their exceptional nature was not recognized at the time. Unfortunately, the most outstanding exception, namely, the one designated by parentheses in table 2, in which

TABLE 2—Comparison of Quantities of Syphilitic Reagin in Serum and Spinal Fluid in a Series of 1,245 Pairs of Specimens

Amount of Syphilitic Reagin (Units) in Spinal Fluid*	Amount of Syphilitic Reagin (Units) in Serum*									Totals
	0	0.1	1.2	2.4	4.8	8-16	16-32	32-64	Over 64	
0	222	99	94	76	96	68	54	23	16	748
0.1		17	12	24	20	32	24	12	4	154
1.2		1	6	9	10	35	30	41	14	156
2.4				3	6	12	14	34	27	109
4.8					1	4	4	12	22	57
8-16					(1)†		2	6	6	21
Totals	223	122	118	118	176	150	171	104	63	1,245

* The inclusive numbers used cover the second figure but not the first.

† Technical error (?).

The figures in this table represent numbers of pairs of specimens. For example, there were 222 pairs of specimens of spinal fluid and serum of which each member gave a negative reaction with Kline antigen, there were 99 pairs of which the spinal fluid gave a negative reaction and the serum gave a quantitative reaction of no more than one unit.

the titer of the spinal fluid was 16 and that of the blood only 4, occurred early in the study. Since further tests were not done, it is possible that these results arose through some technical fault, but this explanation cannot be applied to the other, less striking exceptions. Here one must take into account certain unavoidable differences in sensitivity of flocculation tests on blood and spinal fluid, even when these are carried out in an identical fashion. This difference in sensitivity is apparently due to the presence in the serum of inhibiting substances not present in the spinal fluid. This can be demonstrated by carrying out comparative titrations on syphilitic serum (or spinal fluid) with saline solution, normal spinal fluid and normal serum as diluting fluids. In such tests the titers are highest when saline solution is used as the diluent, slightly lower when normal spinal fluid is used and decidedly lower with normal serum.

A positive Wassermann reaction of the spinal fluid in the face of a negative reaction of the serum is reputed to be not uncommon in neurosyphilis ^{1c} Similarly, when quantitative Wassermann tests have been made, the titer of the reagin in the spinal fluid has often been reported to be higher than that in the blood serum ^{1c} From these observations certain investigators have been led to the conclusion that syphilitic reagin is often present in the spinal fluid even though absent from the blood serum, and that when reagin is present in both fluids the quantity in the spinal fluid can exceed that in the serum

When this study was undertaken, we had more or less accepted the interpretation just given and expected our findings with the quantitative

TABLE 3—*Comparison of Wassermann and Flocculation Technic in Cases of Positive Wassermann * Reaction of the Spinal Fluid and Negative Reaction of the Blood*

Specimen	Blood Serum		Spinal Fluid	
	Wassermann	Flocculation Titer	Wassermann	Flocculation Titer
9	Negative	4	Positive	1
38	Negative	1	Positive	0
73	Negative	0	Positive	2
134	Negative	2	Doubtful	0
{235	Negative	1	Positive	0
{556	Negative	1	Positive	0
{285	Negative	0	Positive	0
{530	Negative	0	Doubtful	0
{258	Negative	0 5	Positive	0
{591	Negative	0	Positive	0

* The Wassermann tests were performed by the New York State Department of Health Laboratories

Whereas the Wassermann technics used were different for blood and spinal fluid, the quantitative flocculation method was the same for both. The approximate relative sensitivity of the tests was as follows: spinal fluid Wassermann test > spinal fluid flocculation test = serum flocculation test > blood Wassermann test. Specimens bracketed together were taken from the same patient at intervals of approximately six months.

Kline test to confirm it. As a matter of fact, as has just been demonstrated, despite the relatively large size of our series, there were few cases in which more reagin was demonstrable in the spinal fluid than in the serum (table 2).

The explanation for the apparent discrepancy between our results and those formerly reported can be found in the difference in the method of performing the tests. Whereas one and the same quantitative technic was used for both serum and spinal fluid in the present study, the Wassermann tests customarily performed for the two fluids are different. Thus, the dose of spinal fluid ordinarily used in the Wassermann test varies between five and ten times the quantity of serum used. In addition, there are inhibiting substances in the blood serum which diminish the sensitivity of the Wassermann test of the blood, such substances are lacking in the spinal fluid. It is evidently possible, there-

fore, for the Wassermann reaction of the spinal fluid to be positive and that of the blood negative even though there is actually more reagin in the blood than in the spinal fluid. In fact, a number of such cases were encountered in the present study, and these are given in table 3. It will be seen that in 7 cases (embracing 10 examinations) the Wassermann reaction of the spinal fluid was positive but that of the blood was negative. However, when the described quantitative flocculation technic was used, in only 1 instance did the spinal fluid react to a higher titer than the blood serum, and here one must take into account the possible effect of inhibiting substances present in the blood serum but lacking in the spinal fluid. Incidentally, the number of instances of a positive Wassermann reaction of the spinal fluid and a negative reaction of the blood was relatively small in comparison with other reports.⁴ This can be explained by recent improvements in technic of the Wassermann test and the decrease in disparity between the sensitivity of the test of the spinal fluid and that of the blood, due particularly to the increase in sensitivity of the latter test.

COMMENT

The findings presented are of interest in connection with the problem of the site of origin of the reagin in the spinal fluid. Two explanations have been offered for the presence of syphilitic reagin in the spinal fluid of patients with neurosyphilis: (1) that the antibodies are formed locally, and (2) that they are derived from the blood serum by filtration through the blood-brain barrier.^{1b} The main argument which has been offered in favor of the latter explanation is that rarely, if ever, is there more reagin in the spinal fluid than in the serum. Although, as we have shown in this paper, it is true that the reagin content of the spinal fluid is hardly ever greater than that of the serum, this is not a valid argument for Dujardin's theory. In a previous paper⁵ we presented evidence which apparently contradicted Dujardin's concept and indicated that the syphilitic reagin in the spinal fluid of patients with neurosyphilis is at least in large part formed locally. This was done by comparing the isoagglutinin and the reagin titer in the blood and spinal fluid of such patients. Were the theory of passive filtration correct, a parallel filtration of isoagglutinins could be expected. However, in no case was any isoagglutinin demonstrable in the spinal fluid, even when the reagin titer was equal in blood and spinal fluid and the isoagglutinin

4 Katzenelbogen, S., Rogovine, S., and Monedjikova, V. Relation Between the Wassermann Reactions in the Blood and in the Cerebrospinal Fluid. Contribution to the Question of the Origin of Antibodies, *Arch Neurol & Psychiat* **21** 376 (Feb.) 1929.

5 Wiener, A. S., and Derby, I. M. Site of Origin of Syphilitic Reagin in Spinal Fluid of Patients with Neurosyphilis, *Proc Soc Exper Biol & Med* **38** 487, 1938.

titer in the blood higher than that of the reagin. This must not be taken to mean that there is never any filtration of reagin from the blood into the spinal fluid, since the two explanations offered for the presence of reagin in spinal fluid are not mutually exclusive.

Since our evidence favors the theory of local formation of syphilitic reagin in the spinal fluid, it is of interest to inquire what significance is to be attached to the fact that the titer of reagin is consistently lower in the spinal fluid than in the blood. It may be that the capacity to form syphilitic reagin (and other antibodies) is less highly developed in the central nervous system than elsewhere, possibly because of its small number of reticuloendothelial cells.

The results of the present investigation should be of value to the clinician from the standpoint of diagnosing syphilis of the central nervous system. Thus, in the present series not a single case was encountered at the initial diagnostic examination in which the Kline exclusion test on serum was negative and the flocculation or Wassermann test on the corresponding spinal fluid positive, and only 3 cases were found in which after treatment the Kline exclusion test on the serum was negative but the spinal fluid gave a positive reaction (table 3). Therefore, when the question of the presence or absence of syphilitic meningoencephalitis arises, this diagnosis can be practically excluded by examination of the serum alone when a sensitive test like the Kline exclusion test gives a negative result.

SUMMARY

The concentrations of syphilitic reagin in serum and spinal fluid were compared in a series of 1,245 pairs of specimens, by a quantitative flocculation technic. It was found that with the method used titers as high as 500 were attained in the blood serum, whereas the titer of the spinal fluid never exceeded 16. Moreover, the amount of reagin in any spinal fluid was practically always less than that of the corresponding serum. The bearing of these observations on the question of the site of origin of syphilitic reagin in the spinal fluid of neurosyphilitic patients is discussed.

PATHOLOGIC FRACTURE DUE TO SYPHILIS

REPORT OF A CASE WITH BIZARRE ROENTGEN
FINDINGS AND FAVORABLE RESPONSE
TO THERAPY

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Dermatologists are increasingly appreciative of visceral syphilis. This report demonstrates some unusual manifestations in syphilis of the bones and viscera.

Syphilis has long been recognized as a cause of pathologic fracture. Such fractures, however, are becoming increasingly less common. The older writers emphasized syphilis, and the more recent ones have mentioned it in considering the causes of pathologic fracture. Thus Hazen¹ stated: "Fractures as a result of bone destruction are frequently seen and are so frequent as to arouse always in such cases the suspicion of syphilis." Fragenheim² devoted considerable discussion to syphilitic fracture and Boyd³ admitted the possibility of such phenomena. Eliason,⁴ in reviewing pathologic fractures of various causes, cited Speed as stating that large numbers of spontaneous fractures due to syphilis are seen each year at the Cook County Hospital. From what follows this citation, however, it seems probable that most of these fractures are neurogenic (tabes, dementia paralytica) rather than due to actual syphilitic involvement of bone.⁵ Eliason went on to say: "Syphilitic disease of bone *per se* is seldom a cause of pathological fracture." Bowman⁶ listed syphilis in a paper on pathologic fracture, but

From the Service of Dr. Elmore B. Tauber, Director of Dermatological Service, the College of Medicine, University of Cincinnati, the Cincinnati General Hospital.

1 Hazen, H. H. Syphilis. A Treatise on Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis, and Treatment, St. Louis, C. V. Mosby Company, 1919, p. 253.

2 Fragenheim, P. Die Syphilis der Knochen, in Jadassohn, J. Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1928, pp. 201-203.

3 Boyd, W. Surgical Pathology, Philadelphia, W. B. Saunders Company, 1938, p. 705.

4 Eliason, E. L. Pathological Fractures, Surg., Gynec. & Obst. **56**: 504-521 (Feb.) 1933.

5 In a personal communication, Dr. Speed has confirmed this impression.

6 Bowman, F. H. Pathologic Fracture, U. S. Nav. M. Bull. **35**: 73-79 (Jan.) 1937.

again he did not make it clear whether syphilis was acting in the role of a bone-destroying force or whether the fracture resulted from the neurotrophic changes of neurosyphilis. Allen⁷ cited Eisendrath's classification of pathologic fractures, in which syphilis was considered among the neuropathies that may give rise to pathologic fracture.

During the past two decades the role of syphilis in the incidence of spontaneous fracture has shown a marked decline. No actual figures are available, but Stokes⁸ did not even discuss this phase of syphilis, and Ghormley, Sutherland and Pollock,⁹ in reviewing some 660 pathologic fractures in the Mayo Clinic from Jan 1, 1924, to Jan 1, 1937, failed to find 1 case of fracture attributable to syphilis of the bone. In the Cincinnati General Hospital approximately 900 fractures are seen each year. In over thirty years' experience in this institution, Caldwell¹⁰ stated that only in the case reported here have gummatous changes in the bones been responsible for fracture. In the literature of the past twenty years few reports are available, and as far as can be determined, there are none in the American literature. It seems safe to assume that this decreased incidence of spontaneous fracture from syphilis of the bone parallels the decreased incidence of syphilis of the bone in general since the introduction and widespread use of arsphenamine, neoarsphenamine and other effective antisyphilitic remedies.

When one considers that the usual changes in the bone in late syphilis (except in cranial lesions) are proliferative rather than destructive, it is not surprising that pathologic fracture is relatively infrequent. In what Stokes called gummatous osteomyelitis proliferative and destructive processes often coexist, and it is this type of pathologic change which is apt to be the basis of spontaneous fracture. In congenital syphilis osteoclastic processes are more common than in the acquired form. But even here spontaneous fractures are rare. This has been brought out by McLean¹¹ in his excellent work on congenital osseous syphilis and by Tracy¹² and Stewart¹³.

7 Allen, B. Pathological Fractures, *Radiology* **3** 375-376 (Nov.) 1924.

8 Stokes, J. H. Modern Clinical Syphilology, ed 2, Philadelphia, W. B. Saunders Company, 1934.

9 Ghormley, R. K., Sutherland, C. G., and Pollock, G. A. Pathologic Fractures, *J. A. M. A.* **109** 2111-2115 (Dec. 25) 1937.

10 Caldwell, J. A. Personal communication to the author.

11 McLean, S. Roentgenographic and Pathologic Aspects of Congenital Osseous Syphilis, *Am. J. Dis. Child.* **41** 130-152 (Jan.) 1931, Correlation of the Roentgenographic and Pathologic Aspects of Congenital Osseous Syphilis, with Particular Reference to the First Months of Life, *ibid.* **41** 363-395 (Feb.) 1931, Correlation of the Clinical Picture with the Osseous Lesions of Congenital Syphilis as Shown by X-Rays, *ibid.* **41** 887-922 (April), 1128-1171 (May) 1931.

12 Tracy, F. E. Advanced Osseous Syphilis in a Four-Months-Old Infant, *Radiology* **21** 584-587 (Dec.) 1933.

Experimental data are meager enough. Charpy and Guérin¹⁴ have shown that the bones of syphilitic patients break under less weight and tension than do the bones of normal persons. They also reported some interesting chemical studies of syphilitic bones wherein the fibula of a young person with tertiary syphilis (but without macroscopic involvement of the bones) showed a decreased yield of calcium fluoride.

The clinical picture of syphilitic spontaneous fracture differs in no way from that of similar fracture from other causes, except for the presence of syphilitic osteomyelitis. The fractures are frequently multiple and are often accompanied with osteitis and periostitis of bones not involved by the fractures. Fragenheim said that fractures of the clavicle and ribs may occur as the result of simple muscular activity. The relative order of frequency given by Fragenheim is

Femur	•	15
Clavicle		15
Radius		5
Tibia		4
Ribs		2
Patella		1
Ulna		1
Lower jaw		1

The response to therapy is prompt when proper immobilization and antisiphilitic treatment are given.

REPORT OF CASE

Mrs. B. O., a white woman aged 53, was admitted to the Cincinnati General Hospital on Dec. 5, 1937. She gave a history typical of pathologic fracture, having experienced a snapping sensation in her right arm on the day prior to admission, when she attempted to pick up a 4 pound (2 Kg.) package. There had been no similar previous experience, and the patient had been in good health most of her life. There was a history of recurrent spontaneously healing cutaneous ulcers, dating back about ten years, but the past history was otherwise irrelevant. The patient's husband had had some disease of the blood, for which he had received considerable treatment up to the time of his death. There was no other significant item in the family history and no clinical or serologic evidence of syphilis in the patient's 3 children.

Examination showed a fracture of the middle third of the right radius with characteristic deformity. This was confirmed by fluoroscopic study, which also revealed almost complete resorption of the distal part of the ulna. The skin presented numerous atrophic scars characteristic of healed gummas. There was a small superficial ulcer of the nasal septum on the left. The general physical examination gave negative results. None of the viscera were palpable. The

13 Stewart, D. M. Roentgenological Manifestations in Bone Syphilis, *Am J Roentgenol* 40:215-223 (Aug.) 1938.

14 Charpy and Guérin, cited by Fragenheim.²

neurologic examination showed nothing abnormal. The urine was normal according to the routine tests and the test for Bence Jones protein was repeatedly negative. The Kahn reaction of the blood was 3 plus, the spinal fluid was clear and the dynamics normal and there were no cells. The Pandy, the Wassermann and the colloidal gold test were negative. The red blood cell count was 3,900,000, and the hemoglobin concentration was 70 per cent. The calcium content of the blood serum was 9.8 mg and the phosphorus content 4.2 mg per hundred cubic centimeters. A smear from the ulceration of the nose did not reveal any type of acid-fast bacillus.

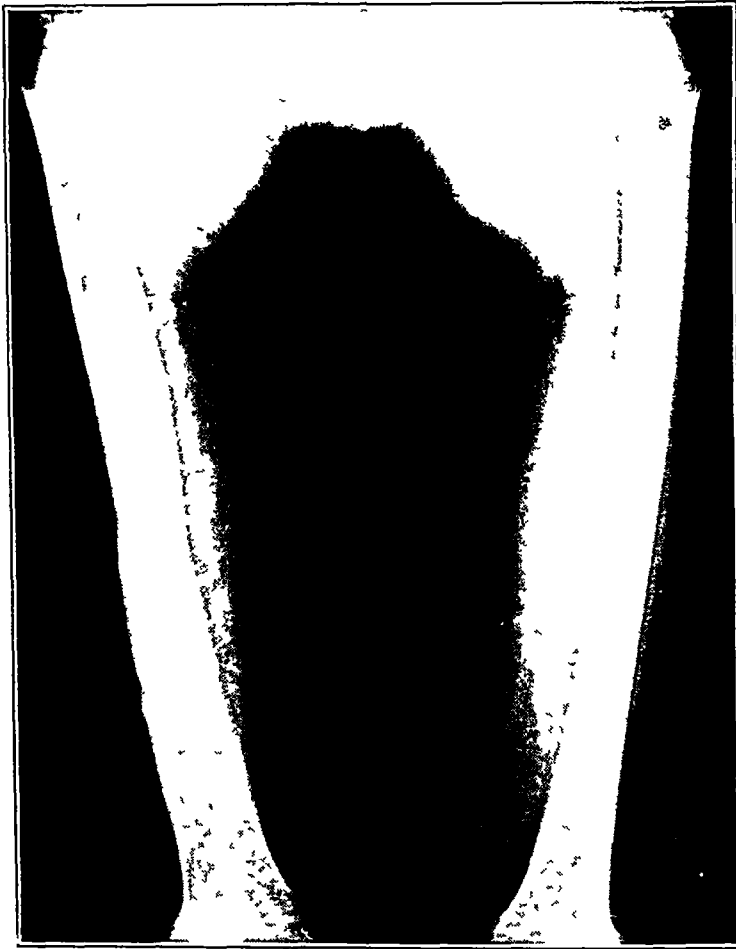


Fig 1—Incomplete fracture of the right femur, osteitis and periostitis, in December 1937

On the patient's admission to the hospital roentgenograms of the right arm confirmed the fluoroscopic findings. Roentgen study of the other bones revealed diffuse osteitis and periostitis of the tibiae, humeri and femurs, and an incomplete fracture of the right femur (fig 1). The skull, pelvis, vertebrae, fingers and toes were uninvolved. In the involved bones there was a preponderance of proliferative rather than destructive reaction.

The diagnosis of multiple skeletal gummas with pathologic fracture of the right radius was made, but in view of the bizarre changes it was deemed necessary to consider other possibilities, such as leprosy and syringomyelia. The nega-

tive nasal smear, the absence of changes in the distal phalanges and of neurologic findings and the negative results of examination of the spinal fluid seemed to exclude these diagnoses satisfactorily.

The patient was put to bed with her arm in a cast, and antisyphilitic treatment was begun. Large doses of potassium iodide were given, and neoarsphenamine and a bismuth preparation were administered. The patient was given eight injections of bismuth subsalicylate and five injections of neoarsphenamine (0.6 Gm each) without untoward reaction. She was then transferred to the Hamilton County Home and Chronic Disease Hospital, where therapy was continued until bismuth stomatitis developed. On Aug. 26, 1938, she was readmitted to the Cincinnati General Hospital. Roentgen examination showed almost complete healing of the fractures of the right radius and femur (fig. 2). There was some decrease in the amount of osteitis and periostitis of the other bones, and the patient



Fig. 2—*A*, healing of the fracture and osteitis of the arms, in August 1938, *B*, healing of the fracture and osteoperiostitis of the femur, in June 1938.

was able to walk about the ward. On this second admission the patient complained of persistent "bloating." Examination showed marked hepatomegaly and splenomegaly. The spleen was much larger than the liver and felt somewhat nodular. These findings had not been made on the previous admission. There was no fluid in the abdomen. The red blood cell count was now 3,500,000, with 65 per cent hemoglobin, the white blood cell count was 5,500, with a normal differential count. The urine showed occasional moderate amounts of albumin, and again the test for Bence Jones protein was repeatedly negative. The blood calcium and phosphorus were within normal limits, the spinal fluid was completely normal. Studies of hepatic function (including the congo red test) gave normal results. Roentgenograms of the gastrointestinal tract were normal. Studies of blood and bone marrow were performed by Dr. Harold S. Schiro, of the department of

internal medicine, and interpreted by him as follows "There is moderate anemia, with a greater deficit of hemoglobin than of red cells. The granulocytes and platelets are normal. The bone marrow shows a slight increase in nucleated red cells which mature normally—a physiologic response to anemia. There is no evidence of leukemia or plasma cell myeloma." It was not possible to ascribe any diagnosis other than syphilis to the visceral lesions, although malignant change, amyloidosis and blood dyscrasia were considered and ruled out on appropriate clinical and laboratory grounds. The anemia responded well to iron therapy, but the hepatomegaly and splenomegaly have remained unchanged during the past six months, despite intensive antisyphilitic treatment. At this writing the patient has had a total of fifteen injections of neoarsphenamine, 0.6 Gm each, and twenty-one injections of bismuth subsalicylate. At the present time she feels well, performs her daily household duties without difficulty and attends the clinic regularly for treatment and further observation.

COMMENT

This case demonstrates again the frequent association of late skeletal and cutaneous syphilis and the protective role which such lesions apparently exert for the central nervous system. These things have been repeatedly emphasized by Stokes and other syphilologists. The periostitis and osteomyelitis involving the long bones are typical of tertiary syphilis from both the clinical and the roentgenologic standpoint. The prompt response to therapy is also characteristic. The rarefying lesions of the radius and particularly of the ulnas were striking and can be classified as examples of gummatous osteomyelitis. While the final diagnosis for the hepatomegaly and splenomegaly must rest with subsequent events, syphilis is the diagnosis of choice at this time. In view of the absence of evidence of portal obstruction, it was felt that vigorous antisyphilitic (arsphenamine) therapy was not contraindicated. The disappearance of the sensations of "bloating" and fulness in the abdomen, despite the fact that the liver and spleen had not changed objectively, justified this course. The healing of the fractures and of the osteitis and periostitis and the conversion of a bedridden patient to an ambulatory one were truly dramatic.

SUMMARY AND CONCLUSIONS

Pathologic fracture on the basis of skeletal syphilis per se is increasingly less common and is to be differentiated from pathologic fracture as a result of the neurotrophic changes of cerebrospinal syphilis.

The decreased number of cases of pathologic fracture due to syphilis of the bone probably parallels the general decreased incidence of syphilis of the bone of the postarsphenamine era.

A case of gummatous osteomyelitis with pathologic fracture and with interesting visceral complications is presented.

Mr. Joseph P. Homan and Mr. John Bledsoe, of the department of medical art and photography, supplied the photographs used in this report.

LICHENIFICATIO GIGANTEA

(LICHENIFICATION GEANTE OF BROcq AND PAUTRIER)

CHAIM BERLIN, M D

TEL AVIV, PALESTINE

During the past year I had the opportunity of observing simultaneously 2 cases of lichenificatio gigantea, which Brocq and Pautrier¹ and most authors have called a peculiar variety of lichenification. Because of the rarity of this disease, the following 2 cases seem worthy of report.

REPORT OF CASES

CASE 1—History—R C, a Jewess aged 82, a native of Russia, had lived 12 years in Palestine. She was first seen in the dermatologic clinic of the Municipal Hospital Hadassah on March 29, 1936. She presented a genital eruption which was diagnosed as genitocrural eczema, which is often seen in this country. The lesion had begun half a year before, with intense itching. Various local applications had not brought any improvement. The patient had never previously had any cutaneous disease. Her family and personal history were unimportant. She had never been seriously ill, except for prolapse of the uterus and hemorrhoids, from which she had suffered for about eighteen years. Routine examinations of the blood, urine and stools gave negative results. The patient received many types of treatment, including ultraviolet irradiation from a quartz lamp and four doses of roentgen radiation, without relief. She discontinued her visits to the clinic for several months and returned on March 25, 1937, complaining that the condition had become aggravated, that new areas had been involved and that the itching had become unbearable, especially at night. She exhibited on the genitalia a typical picture of lichenificatio gigantea, and was admitted to the hospital.

Physical Examination—On admission, May 5, 1937, the patient was somewhat thin but looked well for her age. The buccal mucosa was normal, the mouth had been edentulous for eighteen years. The size of the heart was within normal limits, and a soft systolic murmur was heard at the apex. The blood pressure was 160 mm systolic and 80 mm diastolic. The lungs were normal. The abdomen was tympanitic throughout, there were no palpable masses or areas of tenderness. The glands were not enlarged. The deep reflexes were normal.

Gynecologic Examination (Dr Asherman)—The uterus had prolapsed. On its right side there was a round hard smooth tumor the size of an egg (myoma?).

From the Department of Dermatology, Municipal Hospital Hadassah.

1 (a) Brocq and Pautrier. Ueber einige anormale Formen von Lichenifikation, Arch f Dermat u Syph 99 421, 1910. (b) Pautrier, L M. Contribution a l'etude de lichenification anormales. La lichenification hypertrophique, ou geante, Ann de dermat et syph 6 81, 1925, (c) Les lichenifications anormales, Acta dermat-venereol 8 313, 1928, (d) Lichenification geante, in Darier, J, and others. Nouvelle pratique dermatologique, Paris, Masson & Cie, 1936, vol 7, p 535.

Skin—On both sides of the neck and on the upper part of the chest were areas of pruritus with eczematization. The right genitocrural region showed ordinary eczema. In the left groin (fig 1), extending medianward to the labium majus and downward to the inner upper aspect of the thigh, a tumor-like lobulated mass, measuring about 10 by 8 cm, rose more or less abruptly from the skin, the height being from 7 to 10 mm. Furrows of varying depth were seen throughout the lesion, suggestive of the gyri of the brain. On the upper



Fig 1 (case 1) —Tumor-like lesion in the left groin. Note the furrowed surface and the lichenification of the surrounding skin.

portion one deep furrow caused the formation of a lobule, which lay on the normal skin. On the lower portion the furrows were smaller and less distinct and were mostly covered with bloody crusts. The color varied from pinkish to brownish red, in the groin it was grayish white. The consistency was not uniform: the upper lobule was doughy, like a lipoma, the other mass moderately firm and the grayish white areas almost cartilaginous. The lesion moved with the

surrounding skin, which was erythematous and lichenified, especially on the inner aspect of the thigh. The rest of the skin was normal and somewhat pale and did not show evidence of senile degeneration. The finger nails looked glossy, as if they had been polished.

Laboratory Findings—The hemoglobin concentration of the blood was 60 per cent, and there were 3,600,000 red blood cells per cubic millimeter. The color index was 0.8. The white blood cell count was 9,100, and the differential count was essentially normal. The rate of sedimentation was ninety minutes (Linzemeyer). Chemical examination of the blood showed, per hundred cubic centimeters, sugar, 101 mg; uric acid, 3.3 mg; urea, 39 mg; cholesterol, 292 mg; calcium, 8.5 mg; and chlorides as sodium chloride, 660 mg. The Wassermann reaction of the blood was negative. The urine showed a faint trace of albumin, with 3 to 6 white blood cells per high power field.

Histologic Examination (Dr Karplus)—A deep specimen was removed for biopsy. This contained a small piece of normal skin and a large area of the tumor-like elevated lesion with slightly furrowed surface. In the deeper level of the normal skin there were small nodules which seemed to be prolongations of the large lesion. The most striking feature of the specimen was the pathologic and "giant" enlargement of the papillary body, which presented a dense cellular infiltrate and was sharply separated from the deeper portions of the corium. The overlying epidermis, intact throughout, was in part hyperkeratotic, especially in the furrows. Acanthosis was present in the rete pegs, which were increased in breadth and in length and in some places lacked a basal cell layer (fig 2). The junction of the cutis and epidermis was in places sharply marked, elsewhere it was indefinite, owing to the separation of the epithelial elements and to the invasion of the rete cells by the cellular infiltrate from the papillary layer. Leukocytes were also seen in the epidermis. The small nodules likewise showed acanthosis and a moderate infiltration of the papillary body, and this infiltrate was of a chronic inflammatory character, composed largely of round cells and a scattering of leukocytes, of which many were eosinophils, the connective tissue cells were also increased in number. In contrast to the upper layers of the corium, the deeper layer and the subcutis showed only a patchy round cell infiltration around the blood vessels and the sweat gland ducts.

Course—The patient was discharged from the hospital on May 25, 1937, but she continued to visit the clinic and remained under observation for over a year. The eczematous areas, under the influence of antipruritic lotions and ointments, were entirely healed at the end of one month. The giant lesions in the left groin became progressively flatter, so that after three months they presented the picture of common eczema. When examined in January 1938 the skin in this area was flat and smooth but was vitiligo-like in color.

CASE 2—History—L. A., a Jew 60 years of age, born in Poland, had lived thirteen years in Palestine. His family and personal history were irrelevant. He had not suffered from cutaneous or venereal diseases. Except that hemorrhoids and prolapse of the anus had troubled him for the past twenty years, his general health had been good. There was no history of ingestion of drugs. About three months before he was first seen, in March 1937, erythematous patches appeared in the genitocrural regions, gradually increasing in size and height. The eruption was accompanied with little, if any, sensation. Because it assumed immense dimensions, he decided to visit the clinic.

Physical Examination—The man was rather slender, but fairly well nourished. He was not nervous. Many teeth were absent, and several were dirty and carious. The heart was not enlarged, no murmurs were heard, and the rate and rhythm were normal. The blood pressure was 110 systolic and 70 diastolic. The lungs were normal. There was no tenderness of the abdomen, and the liver and spleen showed no abnormality. The glands were not enlarged. The reflexes were normal.

Skin—Symmetrically located, one in each groin, were two tumor-like flat masses measuring about 10 to 12 cm in diameter. These extended from the proxi-



Fig 2 (case 1)—Section under high power, showing round cell infiltrate in the upper layers of the corium, wide and deep rete pegs and lack of basal cell layer in some places. Leukocytes have invaded the epidermis, a furrow with hyperkeratosis is present.

mal inner parts of the thighs to the scrotum, involving the areas typical for tinea cruris (fig 3). The lesions rose more or less abruptly from the skin, the height being from 5 to 8 mm. Many furrows traversed the surface of the growth, the deepest ones having an almost parallel direction. The color varied from dark brown to dirty gray. They were fairly firm, like verruca vulgaris, and in general appeared to be a coalescence of numerous large warts. The surface was

rough, like a nutmeg grater, and in general its vegetating appearance closely resembled that of a cauliflower. The masses were not tender and moved with the surrounding skin, which was studded with many pinhead-sized nodules, the morphologic picture being that of lichen simplex chronicus. Several nodules near the growth were the size of a pea. Hemorrhoids, prolapsus ani and perianal eczema with hyperpigmentation were present. In addition, scattered over the chest and trunk were the minute spinous follicular nearly skin-colored efflorescences of lichen spinulosus.

Laboratory Findings—The examination of the blood showed 70 per cent hemoglobin, 3,650,000 erythrocytes and 4700 leukocytes, with 52 per cent polymorphonuclear neutrophils, 31 per cent lymphocytes, 13 per cent monocytes and 4 per cent eosinophils. The rate of sedimentation was about two hours. Chemical examination of the blood showed, per hundred cubic centimeters: sugar, 84 mg,



Fig 3 (case 2)—Verrucous lesions in a typical location, with ordinary lichenification in the vicinity.

uric acid, 3.8 mg, urea, 43 mg, cholesterol, 304 mg, calcium, 9.7 mg, chlorides as sodium chloride, 630 mg, and diastase, 66 per cent. The Wassermann reaction of the blood was negative. Examinations of urine and stools for ova and parasites gave negative results. Repeated examinations of scrapings of skin revealed no fungi. An intradermal test with 0.1 cc of a 1:50 dilution of trichophyton produced a negative reaction and a test with a 1:30 dilution a faintly positive delayed reaction.

Histologic Examination (Dr Karplus)—A large specimen was taken from the edge of the mass, this included several small nodules. The most outstanding changes were located in the papillary body, which was enormously enlarged, owing to a cellular infiltrate (fig 4). The overlying epidermis was slightly hyperkeratotic in some places, corresponding to the macroscopically visible minute furrows. There were both narrow and wide processes, which extended more or less deeply into the papillary layer. The epidermis in these places was mostly acanthotic. Between these deep processes there were also slender and short ones,

which could hardly be distinguished from those of the normal epidermis. The basal cell layer was only partly well developed, and in many places the cellular infiltrate of the papillary body penetrated the epidermis. The infiltrate consisted mainly of round cells and lay in highly vascular connective tissue. Scattered throughout were leukocytes, eosinophils and numerous pigment cells. This solid infiltrate was sharply separated from that of the lower zone of the corium, which was only patchy, occurring about blood vessels or in the vicinity of the sudoriferous ducts. All these changes ceased on the edge of the tumor-like plaque, but in the areas where small papules were macroscopically seen, the papillary body presented an infiltrate of the same cellular characteristics. Wide epithelial pegs were also seen there.

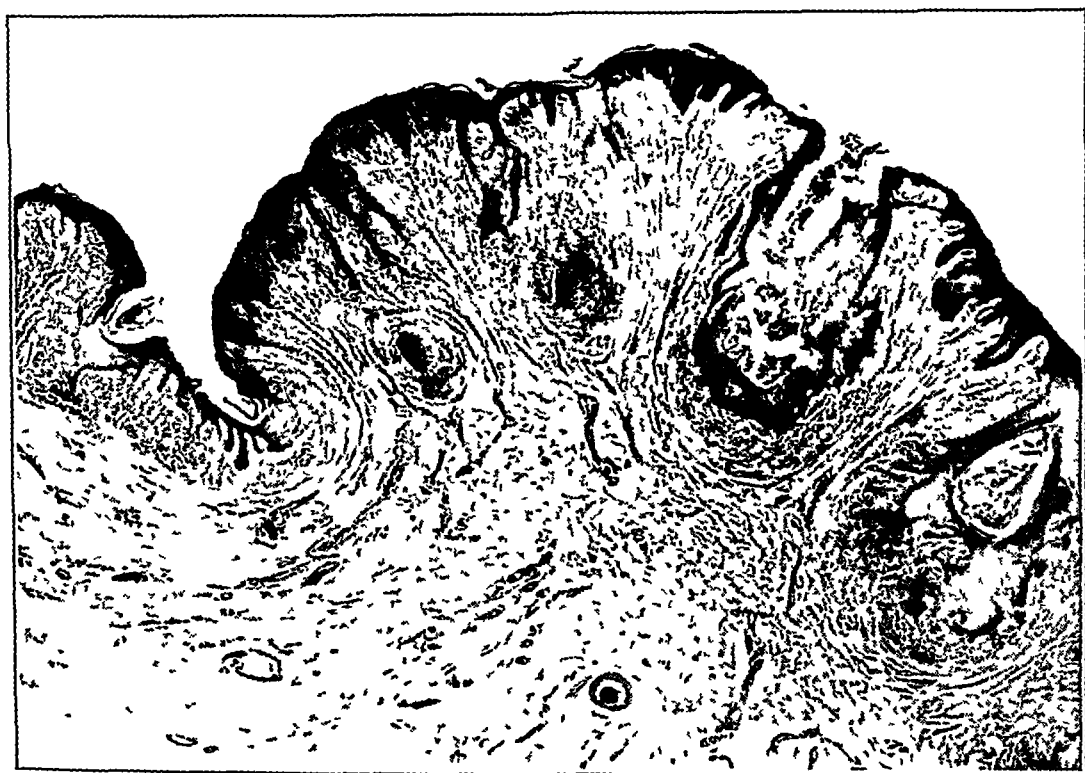


Fig 4 (case 2) —Section under low power, showing the edge of the tumor-like lesion with a small nodule (left side). There is a dense infiltrate in the papillary body and the upper layer of the corium. Formation of furrows and wide and deep acanthotic rete pegs can be seen.

Treatment and Course—The patient was treated by a dentist. Many kinds of local medicaments, keratolytic and reducing remedies, such as salicylic acid, tar and chrysarobin, were given without relief. Roentgen therapy (100 roentgens filtered through 1 mm of aluminum once a week for four weeks) caused improvement. The patient disappeared from observation and was seen again after nine months. He stated that the lesions had undergone resolution several months previously. The areas formerly involved were flat and smooth but decidedly hyperpigmented. In both genital folds the skin was red and moist over an extent of several centimeters and showed a slight degree of intertrigo.

COMMENT

The picture in the first case fitted into the original clinical description of this disorder by Pautrier^{1c} in 1928 and was characteristic in all respects. Typical were the intense pruritus which preceded and accompanied the eruption, the manner of development and the localization, size and shape of the tumor-like lesion, which was divided into parts resembling gyri of the brain. In full accord was the histologic picture: acanthosis especially of the rete pegs and the immense infiltration of the upper part of the corium. An unusual feature was the woman's age, 82 years, for the oldest patient until now mentioned in the literature was 70. In case 2, conjointly with some typical points, such as the site of the plaques on the proximal inner parts of the thighs and the scrotum, the size and height of the verrucous and vegetative lesions and the characteristic histologic picture, were some peculiarities, namely, the relative rapidity of development and the almost complete absence of pruritus before and during the eruption. In both my cases there were hemorrhoids and prolapsus ani and in the woman also prolapsus uteri. The third patient of Merenlender,² with the site of the lesion on the left labium majus, had also suffered from hemorrhoids and prolapsus ani, and in Werther's³ case there was a history of varicose veins.

It will be appropriate to note the good prognosis and the complete healing in both my cases, for lichenificatio gigantea is considered to be a chronic disorder which responds slowly to therapy. In several cases it had lasted more than ten years (Merenlender,² Sorlat and Drouet⁴ and Zoon⁵). There was an impression that in my cases the deep incision for biopsy contributed to the resolution of the lesions.

In 1930 Merenlender listed all the cases of this disorder which were reported in the European literature. The eruption was described under various names, among them papillomatosis cutis, neurodermitis verrucosa, *sarkoide Hauttumoren*, *pseudoelephantiasis scroti et lichenification*, neurodermia chronica vegetans and neurodermitis gigantea. Merenlender's list contained 26 cases, including his own 3. Since then the following authors have reported this disease: Zoon⁵ (1929), Beron⁶

2 Merenlender, J. Ueber Neurodermitis gigantea (Lichenification géante Pautrier-Brocq), Arch f Dermat u Syph **161** 6, 1930

3 Werther. Fall von Neurodermia chronica vegetans, Zentralbl f Haut- u Geschlechtskr **30** 434, 1929

4 Sorlat and Drouet. Lichenification geante et lichen plan buccale, Bull Soc franç de dermat et syph **37** 4, 1930

5 Zoon, J. J. Lichenification geante, Acta dermat-venereol **9** 490, 1929

6 Beron, B. Zweiter Beitrag zur Klinik der anormalen Lichenifikation, Dermat Wchnschr **90** 233, 1930

and Sorlat and Drouet⁴ (1930), Brunauer⁷ (1931), Merenlender⁸ (1932), Lutz⁹ and Beron¹⁰ (1935), Merenlender¹¹ (1937) and Engelhardt¹² (1938). In all, I have been able to find 10 reported cases, most of them were presented at various dermatologic meetings. With my additional two cases the total now reported is 38.

With regard to age and localization, the cases of Brocq¹³ and Wecker¹⁴ presented an exception. Both patients were children, 1 and 1½ years of age, respectively, and the involvement was generalized. In general, older patients predominated. The age varied from 25 to 82, the average being 51. Especially outstanding were Vollmer's¹⁵ and Fantl's¹⁶ patients, with immense papillomatous changes, particularly on the scrotum but also on other parts of the body and in the former, curiously, on the lips and even in the mouth. In one of Pautrier's^{1b} cases, the axillae as well as the genitalia were affected. In Engelhardt's case the lesions were located on the scrotum and on the right wrist, and in the case of Bizzozero and Narducci¹⁷ only the backs of the hands were the seat of the changes. In the other 31 cases only the lower part of the body was involved, chiefly the genitocrural region, which was affected either alone or in association with one other area of the lower extremity. The number of lesions varied from one to several, but frequently only one was present.

Pautrier expressed the opinion that the site of predilection on the genitalia is due to the greater delicateness of the skin in this region. I, however, believe that friction, chafing and irritation from perspiration, sebum and epithelial debris are also responsible, and in this region, therefore, other diseases assume vegetating characteristics. One must think

7 Brunauer. Lichenificatio gigantea Brocq-Pautrier, Neurodermitis hypertrophica Ehrmann, Zentralbl f Haut- u Geschlechtskr **35** 343, 1931

8 Merenlender, J. Neurodermitis gigantea, Zentralbl f Haut- u Geschlechtskr **39** 145, 1932

9 Lutz. Lichénification géante, Zentralbl f Haut- u Geschlechtskr **49** 122, 1935

10 Beron, B. Zwei neue Fälle von anormaler Lichénifikation, Zentralbl f Haut- u Geschlechtskr **51** 342, 1935

11 Merenlender, J. Neurodermitis gigantea, Zentralbl f Haut- u Geschlechtskr **54** 561, 1937

12 Engelhardt W. Neurodermitis verrucosa seu papillomatosa, Dermat Wchnschr **105** 1283, 1937, **106** 304, 1938

13 Brocq, cited by Merenlender²

14 Wecker, cited by Pautrier^{1a}

15 Vollmer, E. Ueber Papillomatose, Arch f Dermat u Syph **79** 293, 1906

16 Fantl, G. Ueber Papillomatosis cutis, Arch f Dermat u Syph **129** 332, 1921

17 Bizzozzero, E., and Narducci, F. Contribution à l'étude des formes anormales de lichenification, Ann de dermat et syph **9** 857, 1928

of pemphigus vegetans in the genital region, and condyloma latum and acuminatum, the morphologic picture of which often resembles the disorder under discussion. In the history of the cases of Vollmer, Fantl, Rusch¹⁸ and Kreibich¹⁹ maceration and sweating preceded the giant changes. Striking is the frequent involvement of the scrotum and the corresponding proximal inner aspects of the thighs, present in 19 of 38 cases. This can undoubtedly be explained by the constant peculiar perspiration that occurs in this region. This is also the reason why the disease is more often encountered in men. Of the 38 patients, 28 were men, 7 women, 2 children and 1 of unknown sex.

As to the designation, it is difficult to find a name for this disease which will satisfy all the authors. Before Brocq and Pautrier it was known in the literature under various titles. Zoon⁵ recently proposed a new name, *prurigo circumscripta papillomatosis sive vegetans*, yet it seems to me that the name *lichenification géante* (*lichenificatio gigantea*) of the French authors is fortunately chosen. The term *lichenificatio* indicates the origin of the disease, from pruritus and scratching, and the surrounding skin frequently looks typically lichenified, the word *gigantea* signifies the monstrousness of these changes.

SUMMARY AND CONCLUSIONS

Two cases of *lichenificatio gigantea* are described in detail. One patient was a woman 82 years of age, and the other was a man of 60.

The good prognosis in both cases is emphasized.

It is pointed out that sweat contributes to the formation of the giant changes. The preference of the disorder for the genital region, especially the male groin, is, therefore, explained.

Merenlender's collection of 26 cases up to 1930 is now enlarged by 10 cases subsequently reported in the literature and 2 reported here, making a total of 38 cases.

The name *lichenificatio gigantea* is fortunately chosen and should be accepted.

9 Montefiore Street

18 Rusch, P. Zur Kenntnis der "sarkoiden" Hauttumoren, Arch f Dermat u Syph **87** 163, 1907.

19 Kreibich, C. Neurodermitis verrucosa, Arch f Dermat u Syph **121** 307, 1916.

SCLERODERMA ASSOCIATED WITH ADRENAL NEOPLASM

REPORT OF A CASE

G BARTON BARLOW, MD

ENGLEWOOD, N J

Statements are made in textbooks of medicine and in the literature concerning the possible relation between scleroderma and pathologic changes of the adrenal glands. This point has never been thoroughly settled, and the cause of scleroderma remains a mystery.

In searching the literature of the past fifteen years I found only two reports specifically mentioning a relation of this disease to pathologic changes of the adrenal glands, and these were in the foreign literature¹

For this reason, the following case is presented with the necropsy report

REPORT OF CASE

A K, a German-born widow aged 59, had lived in the United States for thirty-seven years. She came to the Englewood Hospital on Dec 1, 1936, with chief complaints of pain in the chest for two weeks, dyspnea on exertion for one year or more and stiffness of the joints with discoloration of the skin, which had been progressive during the past two years.

She stated that she had first noticed poor health about two years previously, when articular symptoms developed, first appearing as stiffness of both hands. Coexistent with the development of these symptoms there had been a progressive discoloration of the skin. The symptoms in the joints progressed up to the time of admission, in spite of treatment with injections (preparation used not known) by two local physicians, oral medication prescribed by a third physician and a course of chiropractic treatment. Some time after the symptoms became apparent she noticed increasing dyspnea on exertion, which became progressively worse, until she was unable to walk any appreciable distance. (She could not state whether this was the result of dyspnea or stiffness of the joints or both.) Two weeks before admission she was seized with a constricting precordial pain, which caused her to

From the Department of Medicine, Englewood Hospital

1 Scholz, K. Combination of Scleroderma with Addison's Disease, Combination of Scleroderma with Raynaud's Disease and Tendovaginitis Crepitans, *Klin Wchnschr* 1:1948 (Sept 23) 1922. Devoto, A. Case of Scleroderma Affecting the Finger. Improvement Under Polyglandular Treatment, Especially Adrenal Treatment, *Gior ital di dermat e sif* 66:1071 (June) 1925.

stand still, unable to move. The pain did not radiate. She reported two similar, milder attacks of sudden precordial pain during the previous year.

The patient stated that she had enjoyed good health until two years before. Since then she had had innumerable worries. Her husband had died about one and one-half years previously, and she felt that this shock definitely increased the development of her symptoms. During the preceding three months all of her general symptoms (aside from the acute pain in the chest) had become worse, until she was practically bedridden.

After the symptoms appeared in her hands, a tenseness of the skin on the abdomen and hips became apparent to her. There had been definite amelioration of symptoms in warm weather, with an increase in cold weather. Immersion of the hands in cold water rendered them cyanotic at any time during the entire period of her illness. An apparent thickening of the tongue was also noted, which at times produced difficulty in speech.

At the time of the onset of pain in the chest she had a moderately severe attack of diarrhea (type unknown).

The family history was irrelevant.

Past and Personal History—An operation for femoral hernia had been performed twenty-two years before, and she had had two uneventful pregnancies. Menstruation had been regular until the menopause, which had appeared ten years before, without undue trouble. She did not smoke and took no alcohol or drugs except those prescribed by physicians. She had eaten rye bread all her life.

Physical Examination—The patient was bedridden and suffered from slight orthopnea. The skin presented a dark brownish discoloration most pronounced on the neck, the upper part of the chest, the forearms, the abdomen, the thighs and the legs. The skin in these regions, particularly on the forearms, lower part of the abdomen, left thigh and legs, was tense, smooth and glistening and appeared thin. The face had a waxy appearance, with what seemed to be an early stage of risus sardonicus. The region around the mouth appeared pinched and drawn, the eyes reacted normally, and the pupils were equal, the extraocular movements were normal, the teeth were in poor condition, the mucous membranes were normal. The thyroid was hard, enlarged and smooth on the left side. There was no adenopathy or venous distention. The sternum was prominent, the ribs presenting a contour resembling healed rickets, a diffuse apical beat was noted. There were increased voice sounds in the right axilla, with a slight bronchovesicular quality of the breath sounds. The heart was enlarged to the left and downward, the blood pressure was 118 systolic and 84 diastolic, and the rhythm was irregular, with an occasional forceful beat at the apex, no murmurs were noted, and the sounds were distant. The liver was 3 or 4 cm. below the costal margin and was smooth and hard, the arms were fixed in moderate flexion at the elbow, and the fingers were flexed. The knuckles of both hands were swollen, and there were small ulcerations on the right index and the left middle finger, the arms were fixed at the shoulders, the muscles of the arms and forearms appearing fibrous to the touch, the legs were fixed in flexion at the knee, and the knee joints were swollen and nontender, the ankles and feet were swollen, and the toes were cyanotic, there was no pulsation of the dorsalis pedis or the posterior tibial artery of either side (but the skin was tense on the dorsa of the feet). The muscles of the lower extremities had the same feel as those of the upper, but to a lesser extent. The fingers were typically sclerodactylic, with a tense marble-

like feel to the terminal pulps, extending back to the proximal metacarpal-phalangeal region, the palms had a similar tenseness, the pulps of the fingers were whitish and bore no circulatory color changes whatever

The clinical diagnoses were (1) generalized arteriosclerosis, (2) arteriosclerotic heart disease, (3) possible coronary occlusion, (4) scleroderma with sclerodactylia and (5) adrenal insufficiency (?)

Roentgen Examinations—Pictures of the skull, extremities and abdomen revealed no abnormalities except marked arthritic changes in the extremities

Laboratory Findings—Chemical study of the blood, the blood count, urinalyses and determinations of basal metabolism all gave results within normal limits. There was mild leukocytosis. An electrocardiogram showed myocardial disease and left bundle branch block.

Course in the Hospital—The patient was hospitalized for twenty-four days, without any particular developments, and died suddenly on the twenty-fourth day, presumably from cardiac failure. Her only subjective complaint during hospitalization was of stiffness in the affected joints. While she was in the hospital, her waxlike facial appearance seemed to become more pronounced. Death occurred on Jan 4, 1937, before any attempt was made toward therapy for the scleroderma, and she had purposely been kept quiet because of her cardiac condition.

Autopsy Report (by Francis J Fadden, M.D., pathologist)—Anatomic diagnoses were adenoma of the left adrenal gland, chronic myocardial degeneration, splenitis, adenomatous goiter, cysts of both kidneys, pleuritis, hydrothorax and arteriosclerosis.

The body was that of a well developed, poorly nourished white woman, with markedly bronzed skin with a glistening sheen. The skin was firm and thickened, the arms and fingers were flexed. The knuckles and elbows were swollen, as were the knees. There was callus formation over the finger tips and the knuckles, and the legs showed old scars of ulcers. The face was masklike, the hair dry, brittle and gray and the skin bronzed. The right eye showed corneal opacity, but the pupils were equal. The nose was normal, the teeth poor and the lips dry.

The primary incision was of Y type, and the panniculus adiposus was 0.5 cm thick. The muscles were firm and adherent to the surrounding tissues.

The peritoneal cavity was smooth and glistening. There were no adhesions and no free fluid. The appendix was present and normal.

The right pleural cavity contained 200 cc of thin pale fluid and old fibrous adhesions posteriorly at the base. The left pleural cavity was similar to the right, except that there were no adhesions.

The pericardial cavity was smooth and glistening, with a normal amount of straw-colored fluid.

The heart weighed 420 Gm, the epicardium was dark red, and there were irregular gray plaques 2 cm in diameter over the entire area. The coronary arteries were beaded and firm, they were sclerotic but patent. The measurements of the circumference of the valves were: tricuspid valve 10 cm, pulmonic valve 7 cm, mitral valve 12 cm, and aortic valve 9 cm. The wall of the right ventricle was 0.4 cm thick, and that of the left ventricle, 2 cm. The myocardium showed areas of gray fibrosis, and the ventricles were thin, with soft musculature. The endocardium was dark red and smooth. The mitral valve was thickened and the aortic valve sclerotic.

The right lung was spongy, gray and smooth. Sections of it showed gray, crepitant and subpleural anthracotic markings. A frothy fluid could be squeezed from the bronchioles. The left lung was similar to the right.

The spleen weighed 320 Gm and was firm and dark red. Sections of it showed a fairly firm, dark red pulp. Scant pulp scraped away on the knife.

The pancreas weighed 90 Gm and was firm, yellow and lobulated. Its sections showed a yellow lobulated surface.

The gastrointestinal tract presented no adhesions, no obstructions and no distention.

The liver weighed 1,500 Gm and was dark red, with a smooth capsule. Sections were greasy.

The gallbladder was filled with dark green bile. There were no stones, and the ducts were patent.



The left adrenal gland, showing cut section of the adenoma

The right adrenal gland weighed 11 Gm and was firm and yellow. Its sections showed normal medullary and cortical portions. The left one weighed 20 Gm, measured 7 by 3.5 cm and was firm and yellow. Its sections showed a yellow encapsulated friable nodule 3.5 cm in diameter in the medullary portion.

The right kidney weighed 290 Gm and was firm and dark red. Its sections showed its capsule to strip easily from a smooth surface. There was good medullary and cortical differentiation. There were several cysts 2 to 6 cm in diameter, which were smooth walled and filled with pale fluid. The left kidney weighed 285 Gm and was similar to the right.

The ureters and the bladder were normal. The genitalia were atrophied. The veins and the lymph nodes were normal. The thyroid weighed 65 Gm and was dark red, with fluctuant areas. Sections of it showed the parenchyma to be replaced with cysts filled with thin, pale fluid.

The aorta was sclerotic.

Death was due to chronic myocardial degeneration with failure.

HEREDITARY MULTIPLE TELANGIECTASIA

(RENDU-OSLER DISEASE)

V PARDO-CASTELLO, M D

AND

E PASTOR FARIÑAS, M D

HABANA, CUBA

Multiple telangiectasia occurring in families and passing from generation to generation through heredity has been observed for many years and reported under different names. Originally the disease was considered to be a form of hemophilia, because of the frequent hemorrhages the patients suffer, but in 1896 Rendu¹ first separated it from hemophilia, reporting a case under the name "*Epistaxis répétées chez un sujet porteur de petits angiomes cutanés et muqueux*". It remained for Osler² to create the clinical entity known at present, when in 1901 he published his first report, under the title "*On a Family Form of Recurring Epistaxis with Multiple Telangiectases of the Skin and Mucous Membranes*".

Since the time of Osler's publication the disease has been observed from time to time and his conclusions amply confirmed. A complete review of the literature may be found in Goldstein's articles³. According to Goldstein, perhaps 110 authenticated and accepted instances have been recorded in the entire medical literature of the world, with mention of about 650 affected persons.

CLINICAL DESCRIPTION

The disease is congenital and appears in children and in several members of a family. Often the first manifestations consist of hemorrhages, apparently without any cause, and usually epistaxis but also

1 Rendu *Epistaxis répétées chez un sujet porteur de petits angiomes cutanés et muqueux*, Bull et mém Soc méd d hôp de Paris **13** 731 (Oct 23) 1896

2 Osler, W. *On a Family Form of Recurring Epistaxis with Multiple Telangiectasis of the Skin and Mucous Membranes*, Bull Johns Hopkins Hosp **12** 333 (Nov) 1901

3 Goldstein, H. I. *Hereditary Multiple Telangiectasia*. Goldstein's Heredofamilial Angiomatosis with Familial Hemorrhages or Rendu-Osler-Weber's Disease, Arch Dermat & Syph **26**:282 (Aug) 1932, Goldstein's Disease or Rendu-Osler-Weber's Disease, Acta dermat-venereol **13** 661, 1932, in *Deliberationes Congressus dermatologorum internationalis*, Leipzig, Johann Ambrosius Barth, 1935, vol 1, p 756

bleeding of the gums, pharynx, rectum, stomach or other mucous membranes. In some cases the small, repeated hemorrhages are the only symptoms for several years, the cutaneous phenomena appearing later in life. In other cases the cutaneous and mucosal manifestations are predominant and consist of telangiectases, stellar angiomas and small ruby points. These lesions are situated on the face, chest, arms, mucous membranes of the lips and septum of the nose and in some cases elsewhere on the skin or mucous surfaces. The size of the lesions varies from that of fine threads or small reddish puncta to 4 or 5 mm in diameter, mostly they are dark red threadlike telangiectases, which sometimes coalesce to form spider-like designs, netlike nevi and brilliant red pinpoint-sized angiomas. In rare cases large port wine nevi occupy large surfaces of the skin. On the lips the lesions are punctate and slightly prominent. These punctiform nevi are sometimes pulsating when observed through a diascop, but we have not observed this in any of our cases. The tongue, gums, palate, pharynx and conjunctivas may present delicate vascular dilatations, and the mucosa of the nose, especially on the septum, may present telangiectases which burst easily, with subsequent bleeding. Varices of the legs and hemorrhoids have been reported in some cases. Bleeding from the rectum attributed to hemorrhoids may be really caused by the bursting of small telangiectases of the mucosa of the anus.

Most patients suffer repeatedly from more or less abundant and violent hemorrhages leading to secondary anemia, and sometimes mortal hemoptysis, hematemesis and metrorrhagia have been reported. However, many patients have typical familial, hereditary cutaneous and mucosal lesions which never bleed. Such cases have been reported by Ballantyne,⁴ Laffont,⁴ East,⁴ Madden⁵ and others. Two of the cases to be reported later belong to this category. On the other hand, many cases have been reported in which some members of a family had hemorrhages as the main feature and no telangiectases, while other members of the same family presented cutaneous lesions as well as hemorrhages.

Purpuric lesions have never been observed, the coagulation time and bleeding time are always normal, the blood count presents no changes, and the thrombocyte level is within normal limits. There is no vascular fragility, as demonstrated by a negative reaction to the arm band test. The liver and spleen are usually unaffected, but some

4 Cited by Perin, in Darier, J., and others. *Nouvelle pratique dermatologique*, Paris, Masson & Cie, 1936, vol. 6, p. 509.

5 Madden, J. F., in discussion on Lawless, T. K. Telangiectasia (Hereditary, Hemorrhagic)? Osler's "Recurring Epistaxis with Multiple Telangiectasis of the Skin and Mucous Membranes"? *Arch. Dermat. & Syph.* **30** 295 (Aug.) 1934.

cases have been reported in which there was enlargement of these organs, probably owing to the long existing and repeated hemorrhages. Secondary anemia may be severe in cases of chronic bleeding.

ETIOLOGY

The disease has been definitely separated from hemophilia, purpura haemorrhagica and other blood dyscrasias. It seems to be accepted by the majority of observers that the condition is due to a congenital defect of development of the terminal loops of the capillaries. This defect is transmitted by heredity and considered a dominant characteristic, not sex linked and therefore different from other diseases of the blood vessels or the blood with bleeding tendencies (Ullmann⁶). Both sexes may be affected, but the female is affected more frequently. The number of persons affected in a family is approximately one third, and the condition may be traced through three or four generations. Syphilis, tuberculosis, alcoholism and hepatic disease seem to play no part in the causation. There are no disturbances of menstruation, and childbirth occurs without complications. According to Aubertin and his associates,⁷ the condition may be aggravated after the menopause.

The condition progresses throughout life with no tendency to spontaneous involution, it may be benign and the patient hardly aware of its existence, but it may have a fatal ending due to hemorrhage or secondary anemia.

PATHOLOGY

Most writers have reported vascular dilatations in the form of lakes in the papillary and subpapillary layers. The vessel walls have only a row of endothelial cells and are limited by a thin connective tissue structure without elastic fibers or muscular coat. The epithelium is thinned but otherwise normal. According to Ullmann,⁶ the condition is a disease of the blood vessels and not of the blood, the main feature being the lack of elastic tissue in the walls of the capillaries and in the arterioles and venules, which causes an increased vulnerability or fragility of the blood vessels with a tendency to hemorrhages.

According to Neumark⁸ histologic examination of his sections showed, in addition to dilatation and hyperplasia of the blood vessels,

6 Ullmann. Angiomatosis (Morbus Osler). Ist sie eine Blut- oder Gefass-erkrankung? in *Deliberationes Congressus dermatologorum internationalis*, Leipzig, Johann Ambrosius Barth, 1936, vol 2, p 743.

7 Aubertin, C., Levy, R., and Baclesse. L'angiomatose hémorragique familiale (maladie de Rendu-Osler), *Presse méd* 41:185 (Feb 4) 1933.

8 Neumark. La maladie d'Osler, in *Deliberationes Congressus dermatologorum internationalis*, Leipzig, Johann Ambrosius Barth, 1936, vol 2, p 746.

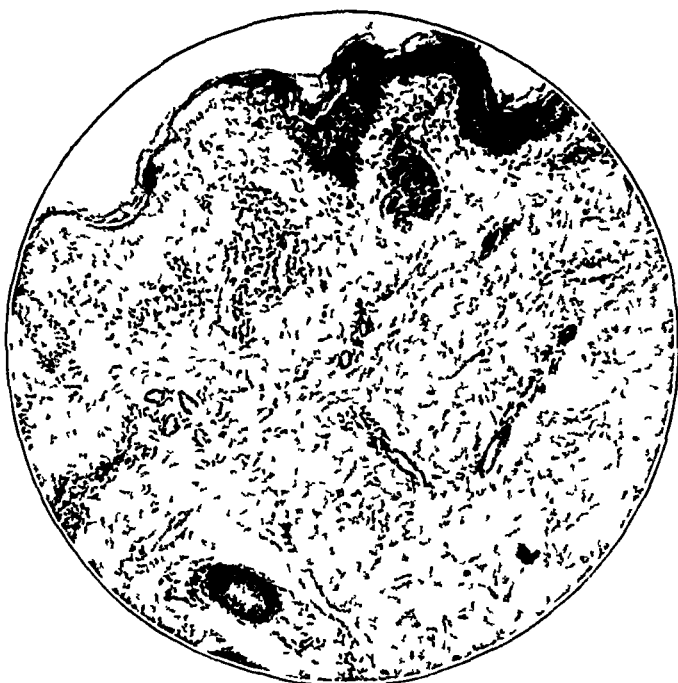


Fig 1—Photomicrograph showing dilated capillaries in the upper part of the cutis, surrounded by proliferation of adventitial cells

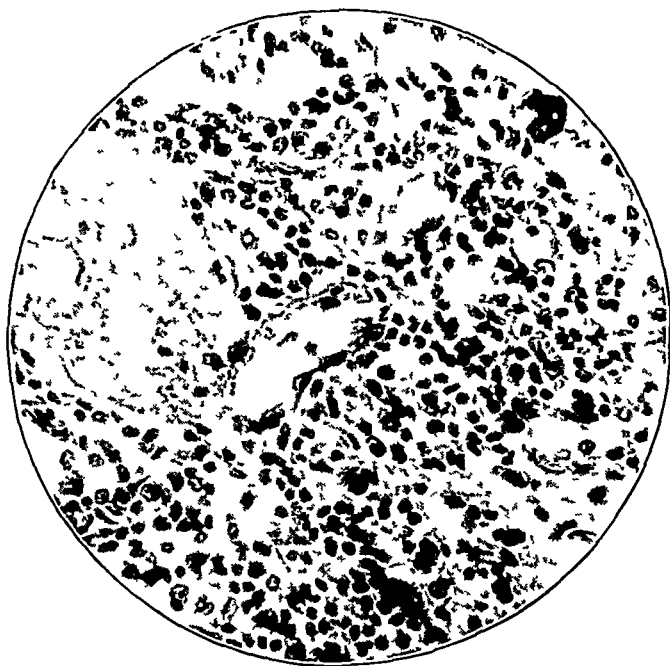


Fig 2—Photomicrograph showing dilated capillaries and the character of the proliferating cells

distinct changes in the connective tissue. These changes may be considered in two groups: the first includes those of degenerative nature, consisting of edema and disintegration of the conjunctive fibers and elastorrhexis and even absence of the elastic fibers. These changes explain the passive dilatation of the veins and of the capillaries (telan-



Fig. 3—Photomicrograph showing absence of elastic tissue in and around blood vessels, Weigert stain

giectases) and the tendency to hemorrhages, usually due to trauma. The second group consists of the presence of numerous newly formed vascular buds, of numerous cellular bands composed of cells with round or oval nuclei (angioblasts), among which may be seen lacunar spaces partially lined with endothelial cells, multiplication of connective tissue cells, and of numerous mast cells.

Most of these features have been confirmed by us, as will be set out later.

REPORT OF CASES

We have had the opportunity to examine three families affected with multiple hereditary telangiectases. Of the members affected we have chosen 1 of each family and endeavored to exhaust the study of his disease. Of family 1, we examined 4 members, of family 2, we examined 2 members, and of family 3, we examined only 1 member.

FAMILY 1—Four members of one generation were examined. The family consisted of the mother, 3 daughters and 2 sons. The mother, 2 daughters and a son were affected, 1 daughter was normal and 1 son's condition was unknown, since he was not available for examination and the mother could give no definite information (fig 4).

A daughter aged 12, white, was chosen for study. She had been born in Cuba of Spanish ancestors. According to the mother, the child had presented the vascular spots since babyhood, and her other 3 children presented the same cutaneous anomalies. She herself had observed these vascular dilatations on her skin since early childhood but had never attached any importance to them. She

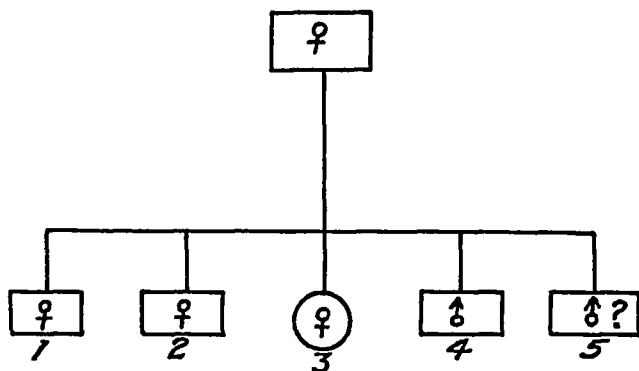


Fig 4 (family 1)—Genealogic chart. In this and subsequent figures a rectangle indicates an affected person, a circle, a normal one.

was an only daughter and did not remember if her parents had this condition. Her first child, the subject of study, had always been healthy except for diseased adenoids and tonsils, which were removed at the age of 8 years without complications or abnormal bleeding.

Examination—On the face, particularly on the nose, cheeks and lips, the patient presented numerous telangiectases, red puncta and small stellar and arachnoid nevi. Similar lesions could be observed on the neck, upper part of the thorax, shoulders and arms. On the mucocutaneous juncture of both lips there were rows of punctiform vascular dilatations of ruby color, the size of pinpoints, symmetrically arranged. On both upper and lower limbs vascular points were observed also, in the form of minute points surrounded by anemic halos about 3 to 5 mm in diameter, which became more visible on exposure to the cold air and when the patient became emotional. Several stellar angiomas were distributed about both arms and legs. The surface of the skin in these locations resembled that of livedo racemosa, owing to the numerous anemic spots around the dilated vessels. On the outer surface of the left elbow there was a port wine nevus 2 cm wide.

Otorhinolaryngologic examination showed no appreciable telangiectases on the mucous membranes of the nose, mouth, larynx and pharynx. The fundi were

normal, and the conjunctivas showed slight vascular congestion. General examination of abdominal and thoracic organs showed no abnormality. The child was well developed for her age. The blood pressure was 100 systolic and 70 diastolic.

Laboratory Tests The Kahn and the Meimcke test were negative. A blood count showed 70 per cent hemoglobin, 4,060,000 red cells and 12,000 white cells, with 4 per cent eosinophils, 67 per cent polymorphonuclears, 25 per cent lymphocytes and 4 per cent monocytes. The bleeding time was two minutes (Duke), the coagulation time, one and one-half minutes (Sabrazes), and the platelet count, 274,540. Arm band compression gave negative results. The injection of 1 mg of epinephrine hydrochloride subcutaneously caused a most curious and unexpected phenomenon. At the end of one hour the telangiectases became tuigescient, new vascular spots appeared on the chest and face, and the anemic halos surrounding the lesions on the arms and legs became more marked. The face had the aspect of an acute rash at a distance resembling measles. Two hours later the skin returned to its usual condition. Injections of epinephrine hydrochloride were given every day for twenty days, and the same transitory phenomena were observed every time. There was no definite change of the condition, the effects of the epinephrine hydrochloride disappearing in a few hours.

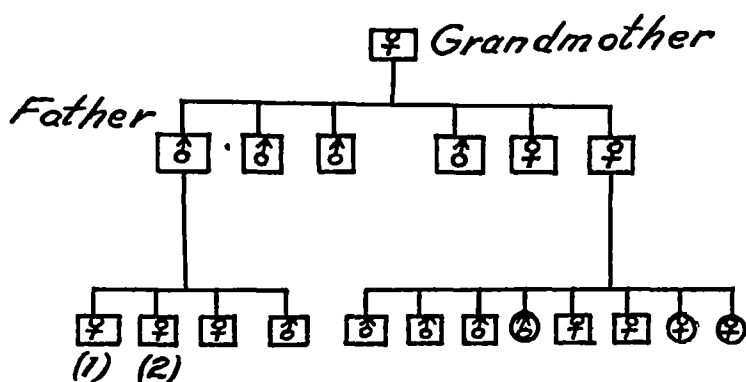


Fig 5 (family 2) —Genealogic chart

FAMILY 2—In this family the telangiectatic manifestations were present in three generations, affecting 15 of a total of 19 members. Of these only 2 with typical Rendu-Osler disease were seen. The patient chosen for study was a white girl aged 18, born in Cuba of Spanish ancestors, a student at normal school (fig 5). The cutaneous lesions had existed since early childhood, causing no inconvenience although they appeared more prominent on the days preceding menstruation and during emotional outbursts. The patient never suffered from epistaxis or other hemorrhages, her menses were of normal amount and duration and she had always been healthy, having suffered only from measles, whooping cough and chickenpox in childhood. Her father was alive and healthy, was 47 years old and presented the same type of cutaneous telangiectases and nevi, but had never had any hemorrhages. There were 2 more sisters and a brother, only the sisters presented telangiectases and spider nevi, although in small numbers. All the patient's uncles and aunts on the father's side, 3 nephews and 2 nieces also showed telangiectatic lesions but no hemorrhages.

Examination—On the face and particularly on the forehead, nose and cheeks there were innumerable capillary dilatations in the form of striae and puncta, telangiectatic networks and spider nevi. The puncta were surrounded by light anemic halos. The color of these lesions was bright red, disappearing on pressure.

but only momentarily, the vessels filling again as soon as pressure was removed. Around the mouth and on the mucocutaneous juncture there were rows of puncta symmetrically situated on both sides of the median line. On the neck there were a small flat nevus about 1 cm. in diameter and a few telangiectases. On the chest, especially on the upper part, the telangiectases were numerous, gathering in several places to form networks, and spider and stellar nevi. On the arms there were many cayenne pepper spots surrounded by anemic halos. On the rest of the cutaneous surface the vascular lesions were sparse.

Examination of the nose, mouth and throat gave negative results. Ophthalmologic examination also showed no abnormalities. The internal organs were normal. The blood pressure was 125 systolic and 85 diastolic.

Laboratory Tests. The Kahn and the Meimcke test were negative. A blood count showed 75 per cent hemoglobin, 4,430,000 red cells and 11,500 white cells, with 3 per cent eosinophils, 71 per cent polymorphonuclears, 22 per cent lymphocytes and 4 per cent monocytes. The coagulation time was one minute (Sabrazes), the bleeding time, one and one-half minutes (Duke). Arm band compression gave negative results. The injection of 1 mg. of epinephrine hydrochloride produced the same phenomena described in the previous case.

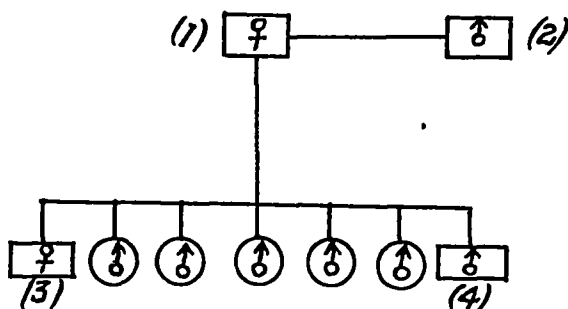


Fig 6 (family 3)—Genealogic chart

FAMILY 3—The condition existed in two generations, but only 1 member of the family could be examined and studied. In 2 of the affected members, a maternal uncle and a brother, only epistaxis was present, the other 2, the patient studied and her mother, had both telangiectases and hemorrhages (fig 6).

The patient was a white girl aged 19, born in Cuba of Spanish ancestors, single, a house worker. She entered the surgical ward of the Mercedes Hospital with elephantiasis of the left lower extremity, chyluria and a history of rectal, oral and nasal bleeding since childhood. Dr. F. Leza,⁹ professor of surgery, performed an operation on the leg, removing a large amount of the hypertrophic skin and subcutaneous tissue, without any complications.

The patient stated that she had had telangiectases, spider nevi and large port wine nevi as long as she could remember. From about the age of 12 she had suffered from slight attacks of epistaxis, which were easily controlled and which had become less frequent in the last five or six years. For the past three or four years she had had rectal hemorrhages every month or two, sometimes twice a month, and occasionally she had seen her saliva tinged with blood and had noticed the taste of blood in her mouth, but not until recently had this amounted to a

⁹ Dr. Leza permitted us to study this patient from a dermatologic point of view.

hemorrhage. Lately oral bleeding had become an almost daily occurrence, and the patient had become pale and weak.

On examination the skin of the face, thorax and extremities showed numerous telangiectases in the form of small red puncta surrounded by anemic halos, thread-like and spider-like nevi and here and there small ruby-colored angiomas. On the mucocutaneous juncture of the lips there were dilated capillaries, most of them in the form of ruby points. The right hand, forearm and arm were the seat of a large flat nevus of a dull bluish red. Practically all of the right lower extremity presented a livid angiomatous surface. It is to be noted that this leg was the seat of an enormous elephantiasis, already mentioned. On the left lower extremity there was likewise a large nonelevated angiomatous surface of livid color, reaching from the upper third of the thigh to the last four toes and the sole, only small surfaces of the posterior region of the leg being normal.

These lesions varied in color according to the emotional state of the patient and to the temperature of the air, the anemic halos around the punctiform lesions being more marked in cold weather and during excitement, when at the same time numerous new puncta and striae became apparent.

General examination showed hypertrophic congested papillae and telangiectases on the posterior third of the tongue. The abdominal and thoracic organs were normal.

Laboratory Tests. The Kahn and the Meimcke test were negative. Urinalysis gave negative results, and filarias were not present in the blood on repeated examination. The blood count showed, on July 24, 1937, 70 per cent hemoglobin, 3,920,000 red cells, and 9,000 white cells, with 2 per cent eosinophils, 54 per cent polymorphonuclears, 24 per cent lymphocytes and 20 per cent monocytes, on August 25, 75 per cent hemoglobin, 3,780,000 red cells and 8,000 white cells, with 8 per cent eosinophils, 70 per cent polymorphonuclears, 20 per cent lymphocytes and 2 per cent mononuclears, on November 12, 65 per cent hemoglobin, 3,650,000 red cells and 16,000 white cells, with no eosinophils, 66 per cent polymorphonuclears, 24 per cent lymphocytes and 10 per cent monocytes.

The coagulation time ranged from two to two and one-half minutes on several determinations, the bleeding time was one minute, and retraction of coagulum, normal. The arm band compression test after five minutes showed a few purpuric spots, which did not increase after ten minutes. The compression test showed anemic halos around the telangiectases and the puncta pronounced, increasing to as much as 3 mm. in diameter.

CAPILLAROSCOPIC DATA

Capillaroscopic examination was performed on the subjects from families 1 and 2 by Dr. Martínez Cañas. In both cases the surface capillaries appeared in excessive numbers, elongated, tortuous and ending in convoluted arches.

HISTOLOGIC OBSERVATIONS

Biopsies were performed in all 3 cases studied, and the pathologic structure was practically identical in all. The epidermis was normal except for slight atrophy corresponding to the most superficial dilated vessels. The papillary layer was edematous, and the connective tissue appeared lax. In the papillary layer as well as in the reticular layer there were numerous dilated vessels of different types. Some consisted of a well formed wall, and some were newly formed capillaries with a single row of endothelial cells, some vessels were limited by a partial endothelial wall, the rest being connective tissue fibers constituting rather vascular lakes in

the surrounding connective magma. Around all these vessels there was cellular proliferation consisting of large ill stained cells of the adventitial type with small nuclei, of numerous lymphocytes and of a few plasma cells. Staining by the Weigert method showed absence, diminution or fragmentation of the elastic fibers in the vessel walls and in the surrounding spaces. The connective tissue around the vessels was loosely woven and edematous. The deeper vessels of the corium were also enlarged and dilated, but the perivascular proliferation was less marked. Where vessels were massed together the microscopic picture was that of angioma.

COMMENT AND CONCLUSIONS

Three families suffering from hereditary multiple telangiectases, a total of 34 members, of which 24 were said to be affected, have been studied. Of the latter, 7 were seen by us, and 3 were made the subject of this study. Of the patients examined, 6 were female and 1 was male. Of the total of 24 persons affected, 13 were female and 11 male. All were white persons, and their ages varied from 4 to 60 years. Actual hemorrhages or a history of hemorrhages together with telangiectasia of the skin and mucous membranes were found in only 3 cases, telangiectases without hemorrhages were found in 19 cases and repeated epistaxis without apparent telangiectases was present in 2 cases. In only 1 case were the repeated hemorrhages severe enough to cause any concern and produce secondary anemia.

Pathologic examination showed rarefaction of the connective and elastic tissue surrounding the vessels of the corium and a proliferation of reticuloendothelial cells and lymphocytes around the vessels, resembling the picture of angioma.

Capillaroscopic study showed excessive richness of surface capillaries, lengthening and tortuosity of the loops and convolution of the terminal arches.

The presence of anemic halos around the capillary dilatations, possibly caused by the rarefaction of the connective tissue, is to be emphasized. The injection of 1 mg. of epinephrine hydrochloride subcutaneously caused delayed dilatation of the blood vessels, occurring between one and two hours after the injection, numerous new capillaries becoming apparent. The anemic halos were made more marked by epinephrine hydrochloride, exposure to cold air and emotional states.

From these observations it may be concluded that hereditary multiple telangiectasia is a congenital, hereditary, familial condition due to a malformation of the capillaries and of their surrounding supporting tissues, with proliferation of the adventitial cells. This condition is similar to angiomatosis. It may also be concluded that it is not primarily and necessarily hemorrhagic and that hemorrhages are probably due to the fragility of the small vessels which lack true walls under increased pressure or small trauma.

KAPOSI'S VARICELLIFORM ERUPTION

A REPORT OF FIVE CASES, IN ONE OF WHICH THE CONDITION
BEGAN AS HERPES ZOSTER

ALLEN D KING, M D

WILMINGTON, DEL

Persons subject to atopic eczema may present a varioliform eruption as a complication Kaposi¹ recognized this fact, describing the eruption in 1887 Juliusberg² also recorded the condition, under the title of pustulosis acuta varioliformis Both terms suggest a kinship to the eruptive virus diseases, and the presence of the umbilicated pustules certainly adds weight to the possibility of this relationship The appearance of the firm umbilicated pustule with the dry adherent serosanguinous crust in the umbilication is distinctive, once seen the eruption is not readily confused with those of ordinary pustular dermatoses The pustules are discrete, and peripheral extension, as encountered in the impetiginous processes, is seldom found Few of the case reports noted any tendency toward grouping of the lesions, and the eruption was localized most often on the face and neck The inflammatory reaction is severe, regional adenopathy is the rule, and the systemic phase, indicated by fever, malaise and toxemia, is out of all proportion to the visible cutaneous damage Early writers held that the process was limited to children, but Goeckerman and Wilhelm³ McLachlan⁴ and Fruhwald⁵ reported cases of adults, and the present report includes cases of 2 adults, 1 a woman of 70 years In the reported cases the condition has generally been sporadic in origin and free of any contagious factor, however, McLachlan and Gillespie⁶ reported 16

1 Kaposi, M J Pathologie und Therapie der Hautkrankheiten, Vienna, Urban & Schwarzenberg, 1887, p 483

2 Juliusberg, F Ueber Pustulosis acuta varioliformis, Arch f Dermat u Syph 45 21, 1898

3 Goeckerman, W H, and Wilhelm, L F X Kaposi's Varicelliform Eruption Report of a Case, Arch Dermat & Syph 32 59 (July) 1935

4 McLachlan, A D Kaposi's Varicelliform Eruption, Brit J Dermat 46 8, 1934

5 Fruhwald, R Pustulosis vacciniiformis acuta beim Erwachsenen, Dermat Wchnschr 99 922, 1934

6 McLachlan, A D, and Gillespie, M Kaposi's Varicelliform Eruption An Epidemic of Sixteen Cases, Brit J Dermat 48 337, 1936

cases that developed in rapid succession in the pediatrics section of a Scottish hospital Corson and Ludy⁷ reported 3 cases of children, they stressed the resemblance to the virus dermatoses but pointed out that one of their patients had had chickenpox and also a successful vaccination Freund,⁸ studying the condition in a 2 year old girl, was able to produce Guarnieri's corpuscles in the cornea of a rabbit inoculated with vesicle fluid and concluded that a virus was the cause This patient was not immune to vaccination at a later date Under the caption of eczema vaccination, Ellis⁹ reported an eruption developing in eczematous twins who had been associating with an older brother who had an active vaccination take One twin died The clinical description and photographs in these cases closely resemble those of cases reported under the term Kaposi's varicelliform eruption

REPORT OF CASES

CASE 1—K Z, a robust white man aged 32, had generalized atopic eczema when first seen in 1934 and again one year later A papulopustular eruption consisting of discrete firm umbilicated pustules appeared suddenly and symmetrically on eczematous skin of the face and neck This was accompanied by prostration, malaise and temperatures of 103 to 104 F, and the submaxillary and cervical glands were enlarged Hospitalization was necessary The eruption, which was resistant to the usual measures against pyoderma (treatment with ammoniated mercury, potassium permanganate and aluminum acetate), responded slowly to continuous warm wet boric acid dressings A special nurse and eleven days of hospitalization were required Recovery was complete, without scarring Atopic eczema reappeared later

CASE 2—J R, a boy aged 19 months, had had infantile eczema for several months An acute papulopustular eruption developed suddenly on the face, with severe edema and involvement of the right eyelid The lesions were discrete shotty umbilicated pustules, with marked surrounding inflammation Slight submaxillary adenopathy was present, and the temperature was 99 to 100 F Culture of pustular contents showed *Staphylococcus aureus nonhaemolyticus* The child was hospitalized, and the process cleared under continuous warm wet boric acid dressings Involution was complete, with no scarring

CASE 3—J A, a girl aged 6 months, seen in consultation with her pediatrician, had moderately extensive infantile eczema with a severe papulopustular process involving the face and neck, scalp and extremities Pustules were numerous, large, firm and umbilicated and arose from inflammatory bases Edema accom-

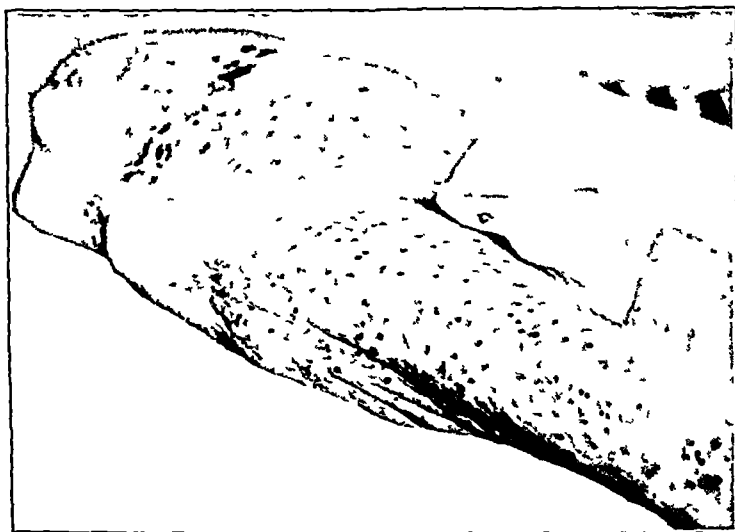
7 Corson, E F, and Ludy, J B Kaposi's Varicelliform Eruption Report of Three Cases, *Am J Dis Child* 50 1476 (Dec) 1935

8 Freund, H Zur Aetiologic der Pustulosis vacciniiformis acuta (Kaposi-Juliusberg), *Dermat Wehnschr* 98 52, 1934, abstracted, Wise, F, and Sulzberger, M B Year Book of Dermatology and Syphilology, Chicago, The Year Book Publishers, Inc, 1934

9 Ellis, F A Eczema Vaccinatum Its Relation to Generalized Vaccinia Report of Two Cases, *J A M A* 104 1891 (May 25) 1935

panied the dermatitis, and a heavy, cheese-like crust was present on the most greatly involved sectors. There was moderate cervical adenopathy. The temperature was 104°. The child's mother, a trained nurse, carried out the therapy of continuous warm wet boric acid dressings. The eruption increased in severity for two days and then began to improve. However, the child's condition became worse. Otitis media developed, the temperature ranged from 105 to 106 F, and the child died eight days later with severe toxemia and probably with pneumonia. Autopsy was not performed. Cultures of material from the pustules showed *Staphylococcus albus* and cultures of the blood a nonhemolytic streptococcus. The culture of the spinal fluid yielded no organism.

CASE 4—G V, a boy aged 3 years, had been seen previously for atopic eczema. Several months later an acute pustular eruption developed on the face and neck. The pustules were of the firm umbilicated type noted in the previous cases and were accompanied by severe edema, cervical adenopathy and moderate elevation of temperature. The services of the nurse who had been on duty in case 1 were secured, and under continuous wet dressings of boric acid solution recovery was secured in four or five days. There was no scarring.



Photograph (case 5) showing the extent of the eruption of umbilicated pustules. Note the zosteriform eruption on the abdomen.

CASE 5—M M, a white woman aged 72 years, was first seen as an ambulatory patient. She was highly nervous and presented atopic eczema of seborrheic distribution. On the right flank there was a firm tumor mass about the size of a lemon. It was dull red, doughy, infiltrated and elevated. The surface of this lesion contained a number of irregular dry necrotic ulcerations. Tenderness and pain were severe. The temperature at this time was 99 F. There was no adenopathy, and the spleen was not palpable. History indicated eczema of four months' duration, which had improved and then recurred. Rest in bed, wet dressings, phenobarbital and roentgen rays in fractional doses were given.

Two days later a house call revealed that the patient had been irrational and uncooperative in treatment. A second group of necrotic vesicles had developed anterior to the original lesion, and in addition a number of discrete small umbilicated pustules were scattered at random over the trunk. The temperature was 101 F.

Hospitalization was effected, and the subsequent course was stormy. The temperature rose to 103 F and fluctuated between 100 and 105 F thereafter. It

was necessary to confine the patient in bed, restlessness and delirium being out of proportion to the fever. Pain on the right side of the chest was severe. The typical large tense umbilicated pustules had become generalized by the second day in the hospital, and they remained so. The pustules were singularly unresponsive to treatment, and no areas showed any tendency toward involution. Signs of bronchopneumonia developed on the fifth day in the hospital, and death occurred on the ninth.

The urine showed a faint trace of albumin on several occasions. A trace of sugar was present during the first few days only. The blood contained 84 per cent hemoglobin and 5,900,000 red cells, 16,450 white cells, 90 per cent polymorphonuclears, 6 lymphocytes, 2 large monocytes and 2 eosinophils per cubic millimeter. Four days later the hemoglobin content was 87 per cent, the red cells numbered 4,940,000 and the white cells 12,000, with 83 per cent polymorphonuclear leukocytes. Hemolytic *Staph aureus* and a hemolytic streptococcus were isolated from contents of a pustule. Blood culture produced a hemolytic streptococcus. (The specimen, of necessity, was drawn through contaminated skin and may not have been reliable.) Culture of blood taken from the heart at autopsy was sterile. The blood was of type II (Moss). Wassermann and Kahn reactions of the blood were negative. The blood contained 141 mg of sugar per hundred cubic centimeters.

Treatment included administration of an ointment containing 2 per cent ammoniated mercury and an oily lotion, freely applied, morphine sulfate and paraldehyde. Eighty grains (5.17 Gm) of sulfanilamide was given daily by mouth for three days. Sherman's stock vaccine, iron cacodylate, caffeine with sodium benzoate and a blood transfusion (300 cc) were given. It was impossible to apply wet dressings because of the patient's extreme restlessness. Later, when the patient was stuporous, dilute solution of sodium hypochlorite U S P (Dakin's solution) was applied experimentally to one leg and seemed to be of value.

Pathologic Report—A complete autopsy was performed by Dr. Frederick A. Hemsath. Several posterior roots and ganglions were dissected out, together with segments from the right side of the spinal cord corresponding with the level of the zosteriform lesions on the right flank.

Briefly summarized, the pathologic report, besides revealing bronchopneumonia as the immediate cause of death, contained the following histologic data:

Sections of the skin were unsatisfactory because of the technical difficulty of preparation.

Sections of the spinal cord showed no infiltration of the posterior roots in the lower lumbar segment which was studied. In the section of the root and ganglion alone, there was rather intense infiltration of the ganglion with small mononuclear cells. There was also an increase in the interstitial cells of the ganglion. The ganglion cells of the posterior root showed rather severe degeneration.

Within the spinal cord were scattered small grape-like areas of degeneration, in which myelin sheaths and axis-cylinders were lost. These areas were observed in the lateral white columns, in the anterior columns and also in the posterior columns. Myelin sheath stains showed them to be cleancut areas of demyelination.

SUMMARY AND CONCLUSIONS

Five cases of Kaposi's varicelliform eruption are reported.

This complication of atopic eczema is serious, especially in the very young or in the aged.

There were 2 deaths, and all patients required hospitalization or the care of a trained nurse at home

The condition in 1 case bore resemblance to atypical herpes zoster, and pathologic changes of the nerve and cord also suggested this condition

The usual measures against pyogenic infections were valueless, and the best results were obtained with continuous warm wet boric acid dressings. It is believed that dressings of dilute solution of sodium hypochlorite U S P would also have been of value

Recovery is not followed by scarring

In this group of cases the condition developed sporadically, without contagious or epidemic factors

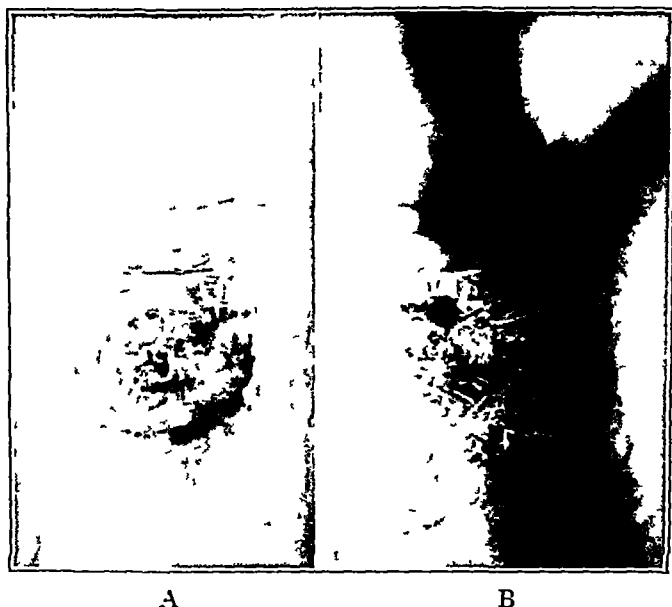
SHEEP POX INFECTION IN MAN

ARTHUR SCHOCH, M D

DALLAS, TEXAS

Because of the meager reports in the literature a case of accidental infection in man by the virus of sheep pox is reported

One recent article has reported 5 cases in England¹ No cases have been reported in the United States



A, Lesion of sheep pox, showing hemorrhagic center and bullous border The discoloration around the lesion is due to medication B, Lesion after treatment, showing almost complete healing at the border Note the abortive lesion below the original site

The lesion is characteristic in appearance¹ starting as a hemorrhagic pustule, around which a deep bullous border rapidly develops This results in an umbilication

The lesion resembles a fresh cowpox vaccination, and the clinical course is similar to that of a vaccination However, the lesions of sheep pox heal with scarring

¹ Peterkin, G A G Occurrence in Humans of Contagious Pustular Dermatitis of Sheep ("Orf"), Brit J Dermat 49 492 (Nov) 1957

REPORT OF A CASE

Z M, a white man aged 32, presented himself because of a single hemorrhagic pustule 3 cm in diameter on the flexor surface of the right wrist. The border consisted of a deep bleb, which contained blood-stained clear fluid.

The history was definite. He had assorted and delivered 2,000 head of karakul sheep from California and had sustained numerous scratches from burs on his legs and one scratch on his wrist. His hands were protected by gloves.

Three days after he sustained the scratch on the wrist a pustule developed at the site. This increased in size during the following six days. There was transient axillary adenopathy, which lasted two days.

The physical examination disclosed no abnormalities except the poxlike lesion on the right wrist (fig, A).

The patient was not acutely ill, the temperature was normal, and culture of material from the lesion yielded only staphylococci. Laboratory examination for sporotrichosis, anthrax and tularemia gave negative results. The blood count was normal. Serologic tests of the blood for syphilis were negative.

The bullous border was clipped off and the lesion painted with 5 per cent methylosaniline (gentian violet) solution daily.

The patient was hospitalized and given 60 grains (3.88 Gm) of sulfanilamide daily for three days, without any dramatic effect on the slowly healing lesion.

Healing was almost complete three weeks later (fig, B).

SUMMARY

The first case in the United States of sheep pox infection in man is reported.

The clinical appearance, the history of exposure and the course of the disease were typical.

The virus causing the infection is probably different from the virus of true cowpox.²

² Bonnevie, P. "Milkers Warts" Infection from "False Cowpox" with a Paravaccinal Virus, *Brit J Dermat* **49** 164 (April) 1937.

Clinical Notes

RECURRENT LYMPHANGITIS TREATED WITH SULFANILAMIDE

S R MERCER, M D, FORT WAINF, IND

The object of this report is to record a case of severe chronic recurrent lymphangitis (elephantiasis nostras) of the upper lip which responded to sulfanilamide therapy. It is my opinion that the aforementioned drug is solely responsible for the improvement. No attempt will be made to review the literature or comment on other means of treatment, aside from mentioning those previously employed in this case. The observations to be reported were purely clinical throughout. No untoward reaction was noted from the use of the drug during or after its administration.

REPORT OF A CASE

Miss M S, aged 29, was first seen on June 14, 1937, on account of enlargement and recurrent swelling of her upper lip. She stated that one day in March 1935, after swimming in an indoor pool, her upper lip became red and irritated. A severe cold followed by a sinus infection (left antrum) ensued. Local treatment and injections of stock vaccine served to clear the sinus infection in two months, but the enlargement of the upper lip which had taken place persisted. A loss of 10 pounds (4.5 Kg) took place in that period. From then on until 1937 she had recurrent attacks of inflammation and swelling of the upper lip, and at one time her entire nose was involved. Each time the acute inflammatory process would subside, only to leave the lip slightly larger. The severest exacerbations took place when a cold was contracted, but there were exacerbations too (to a lesser degree) on exposure to paint fumes, strong sunlight or rainy weather and several days previous to her menstrual periods.

Several complete physical and dental examinations were made during 1935 and 1936. No particular pathologic conditions could be found. Numerous laboratory procedures were employed from time to time without avail. Medication by mouth, administration of vaccines (stock and autogenous), application of unfiltered roentgen rays locally, cutaneous tests, elimination diets, changing cosmetics and pillows, ultraviolet irradiation (generalized) and chiropractic "adjustments" had been tried.

Administration of 20 grains (1.29 Gm) of sulfanilamide per day was begun on June 21, 1937. Medication was continued until the last week in August, when she stopped treatment on her own volition. During that period regression of the lesion was noted in spite of several minor flare-ups, the worst one being due to a prolonged exposure to the sun. On September 5 a cold developed and with it a severe exacerbation of the lesion. Sulfanilamide therapy in the same dosage was resumed at that time and continued for two months, followed by an equal period of rest, and then resumed for another two months, for a total of six months' ingestion out of a possible eight. A course of stock streptococcic vaccine was then administered. No improvement was noted from this form of therapy, and as it was thought that maximum improvement had been obtained, all medication except administration of an iron preparation was discontinued.

At the present time the lip is conservatively estimated to be one-sixth to one-fifth the size it was when first seen and is compatible with the facial contour. Since the withdrawal of medication the patient has had only the slightest transient "puffing" of the lip from time to time, and that only when a cold has been present.

Considering the original size of the lip, the severity of the exacerbations and the duration of the enlargement, the result has been excellent, and the mental outlook and general physical condition of the patient have been improved immeasurably.

An added note of interest is that the patient spent two weeks in Miami, Florida, in March 1939, where she took numerous sun baths, without any disturbance of the lip.

SUMMARY

A case of recurrent lymphangitis (elephantiasis nostras) of the upper lip greatly benefited by prolonged sulfanilamide therapy is reported.

315 Wayne Pharmacal Building

USE OF MAPHARSEN FOR TERMINATING MALARIA ARTIFICIALLY PRODUCED BY INOCULATION

D E H CLEVELAND, M D

Dermatologic Consultant

AND

S E C TURVEY, M D

Neurologic Consultant

VANCOUVER, BRITISH COLUMBIA, CANADA

The use of mapharsen to terminate malaria artificially produced by inoculation in the treatment of neurosyphilis in a series of 24 cases was recently reported by Goldman¹. While it was recommended that to insure against recurrences three or four injections should be given, it was stated that in over 90 per cent of the cases a single injection sufficed to terminate the malaria permanently.

As a result of our experience in treating patients inoculated therapeutically with the organisms of tertian malaria, as were Goldman's, we are heartily in accord with his recommendation that three or four injections should be given to insure against recurrences. We are inclined to believe that more are advisable.

In a series of 9 consecutive patients treated by the Section of Venereal Disease Control of the British Columbia Provincial Board of Health in Vancouver, one injection of 0.04 to 0.06 Gm of mapharsen was given, the dose varying with the patient's weight.

Four of these patients (44 per cent) had no recurrence. Five had two or more chills after the injection. One of these, a woman, had high fever with rigors, and the organism was recovered from the blood.

While mapharsen may supplant quinine as a means of terminating malaria, we should recommend, especially in view of its value and constant therapeutic

From the Section of Venereal Disease Control, British Columbia Provincial Board of Health, Donald H. Williams, M D, Director.

¹ Goldman, D. The Use of Mapharsen in the Treatment of Malaria, *Am J M Sc* 196 502 (Oct) 1938.

index in syphilis, that a full course of injections of mapharsen be given in place of the quinine ordinarily used and the course of neoarsphenamine with which the termination of the malaria is usually followed

A single dose of mapharsen should not be relied on for arrest of the course of therapeutic malaria, especially where it is customary to permit the patient to return home for a two weeks' recuperation period, during which time he is not ordinarily seen by the medical attendant, as has been the practice where quinine is used. Our experience has shown, as before mentioned, that when the malaria appears to have been cured it may have been only temporarily arrested

TREATMENT OF MULTIPLE PIGMENTED HEMORRHAGIC SARCOMA (KAPOSI)

LESTER HOLLANDER, M.D., AND JOSEPH M. SHELTON, M.D., PITTSBURGH

During the past year we have had a case of typical multiple pigmented hemorrhagic sarcoma (Kaposi)

REPORT OF A CASE

The patient, G. C., a Swede aged 67, presented on both lower extremities numerous firm bluish rounded nodules varying in size from that of a split pea to that of a bean, of one year's duration. Histologic examination confirmed the clinical diagnosis of multiple pigmented hemorrhagic sarcoma.

Since we have been using contact roentgen irradiation for intraoral and certain selected superficial cancers, we decided to treat several of these lesions in the same manner. Treatment was directed to one of the largest nodules. A single dose of 1,620 roentgens was given. The factors used were 50 kilovolts, 4 milliamperes, 3 cm target-skin distance and time six minutes. The inherent filter factor of our contact therapy tube is approximately 0.2 mm of nickel. (We have found the half value layer to be approximately 1 mm of aluminum.)

In about ten days a moderate erythema was present around the treated lesion, and during the ensuing four weeks the nodule completely receded. It has not recurred during the past year.

Since then eight additional lesions have been treated with single doses varying from 600 to 1,650 r. It was found that these lesions required a minimum dose of 1,500 r, all lesions treated with this dose have completely receded.

We think that this method of therapy is particularly well adapted for the treatment of this entity, on account of the ease of application and the ready response of the lesions.

The optimum dose of roentgen rays has been established at 1,500 r.

From the Pittsburgh Skin and Cancer Foundation

Abstracts from Current Literature

EDITED BY DR HERBERT RATTNER

MONOCYTIC LEUKEMIA AND OTHER NEOPLASTIC DISEASES OCCURRING IN MICE FOLLOWING INTRASPLENIC INJECTION OF 1,2-BENZOPYRENE J FURTH and O B FURTH, Am J Cancer **34** 169 (Oct) 1938

After intrasplenic injection of 1,2-benzopyrene, a carcinogenic agent, in 96 mice, 9 cases of monocytic leukemia, 2 cases of neoplastic hemangioma and 2 of atypical sarcoma were observed. These conditions are rare in mice of the stock used in these experiments and as controls. The incidence of pulmonary tumors and of myeloid leukemia was considerably increased in the treated group of mice.

OCCURRENCE OF CANCER IN RATS TREATED WITH OESTRONE C S McEuen, Am J Cancer **34** 184 (Oct) 1938

Histologically malignant tumors, chiefly squamous cell carcinoma, were observed more frequently in a group of rats treated for long periods with estrone and subjected to local irritation, such as that produced by gashouse tar, than in a control group.

HODGKIN'S DISEASE WITH ULCERATIVE INVOLVEMENT OF SKIN S B PFSSIN and ERNST POHLE, Am J Cancer **34** 220 (Oct) 1938

The authors report a case of ulcerative lymphogranuloma of the skin of Hodgkin's type, which they considered to be secondary to primary osteomyelitic Hodgkin's disease of the underlying sternum. The lesion healed after roentgen therapy, but three years later multiple cutaneous ulcers and generalized lymphadenopathy developed, terminating in death.

LEUKEMIC LYMPHOBLASTOMA IN CALF. HEMATOLOGIC AND HISTOLOGIC STUDY J STASNEY and W H FELDMAN, Am J Cancer **34** 240 (Oct) 1938

This study indicated that the immature lymphocytes in the peripheral blood stream originated as immature cells of the reticulum cell type in involved lymph nodes. The histologic picture of involved tissues and the peripheral blood stream was that of lymphatic leukemia in man. Some of the enlarged lymph nodes showed the histologic picture of lymphosarcoma. FOERSTER, Milwaukee

CLINICAL ASPECTS OF ANEURYSM JOHN H MILLS and BAYARD T HORTON, Arch Int Med **62** 949 (Dec) 1938

Mills and Horton record the incidence of syphilis in a series of 596 cases of aneurysm. When the cases were classified according to the location of the aneurysm, syphilis was found in 35 per cent with intracranial aneurysm, in 70 per cent with thoracic disease, in 9 per cent with abdominal involvement and in 9 per cent with involvement of the extremities. In the 339 cases of thoracic aneurysm, the ratio of male to female patients was approximately 4 to 1. Arteriosclerosis was thought to be an important factor in the development of abdominal aneurysm and of thoracic aneurysm in older persons. Aneurysm of the peripheral arteries occurs earlier in life than aneurysm of other parts of the body.

LYNCH, St Paul

MICROSCOPIC AGGUTINATION TEST FOR DIAGNOSIS OF SWINE ERYSIPIAS A G KARLSON and S H McNUTT, *J Infect Dis* **64** 49 (Jan-Feb) 1939

The authors describe a microscopic test which they found more reliable than the tube test previously described. Directions are given for preparing an inexpensive medium to obtain antigen and for routine work with the organism of swine erysipelas. Dilutions of the serum are made in watch glasses. Hanging drops are then made from each dilution, and each slide is subjected to incubation for fifteen minutes. Examination of the preparations with the low power lens will reveal clumping of the bacteria when the test is positive. When normal serum is used the bacilli will remain uniformly distributed throughout the field. Checks or controls are essential.

ACTION OF PRONTOSIL-SOLUBLE AND SULFANILAMIDE ON PHAGOCYTIC ACTIVITY OF LEUKOCYTES AND ON DISSOCIATION OF STREPTOCOCCI RUTH TUNNICLIFF, *J Infect Dis* **64** 59 (Jan-Feb) 1939

The author found that neoprontosil (formerly prontosil soluble) and sulfanilamide in dilutions up to 1 1,000,000 for the former and to 1 2,000,000 for the latter in saline solution promote phagocytosis of greening and hemolytic streptococci. Both preparations appear to stimulate the activity of leukocytes but do not act as opsonins. Stabilized R cultures of greening streptococci are more phagocyttable than their stabilized S forms. Streptococci grown in from 1 to 10 per cent neoprontosil or in 1 1,000,000 sulfanilamide in 1 per cent dextrose broth show by chain formation and granular growth some S→R change which appears to make the streptococci more phagocyttable. A 1 1,000 solution of neoprontosil and a 1 1,000,000 solution of sulfanilamide promote phagocytosis of streptococci in pus. Neoprontosil and sulfanilamide injected subcutaneously into 9 patients with monocytic leukemia and 2 with neoplastic hemangioma appear to have stimulated the activity of the leukocytes to the same degree.

CORNBLFET, Chicago

EFFECTS OF INTRAMUSCULAR INJECTIONS OF VITAMIN B₁ ON ACUTE LEPROUS NEURITIS AND OF ORAL ADMINISTRATION ON GENERAL DISEASE PRELIMINARY REPORT L F BADGER and D W PATRICK, *Pub Health Rep* **53** 969 (June 17) 1938

During the six months preceding their report Badger and Patrick treated 10 patients who had severe acute leprous neuritis of the peripheral nerves with intramuscular injections of thiamin chloride. The injections were begun as soon as possible after the onset of symptoms, or when the patient first complained of pain. The procedure followed was administration of 300 international units once a day by intramuscular injection and twice a day by mouth. Of the 7 cases in which the injections were begun on the day of onset, the pain disappeared completely twenty-four hours after the first injection in 4, in forty-eight hours in 1 and on the fourth day in another. In 1 case, owing to required emergency treatment, the injections were discontinued after two had been given, on the third day the pain was moderate, after which it continued to lessen in severity until the seventh day, when it was no longer present. Tenderness could no longer be elicited after twenty-four hours in 1 case and after three or four days in all but the 1 case in which the treatment was interrupted. In this case no tenderness could be elicited on the seventh day. In each case the tenderness was less marked twenty-four hours after the first injection. Definite diminution in the swelling occurred about the time that the tenderness disappeared. In 1 case the treatment by injection was begun on the second day of symptoms, and twenty-four hours later the pain lessened definitely. The pain disappeared entirely after three injections, and after four injections the tenderness disappeared completely. In 2 cases the injections were begun on the fourth and fifth days of symptoms. In one of these the response

to treatment was not as abrupt, and the improvement was not sharply defined from day to day. In the other case the results were about as prompt as in the majority of the cases

J A M A

HEREDITARY TRANSMISSION OF LYMPHOGNULOMATOSIS VENEREA WALDEMAR E. COUTTS and OLGA MONETTA, *J Trop Med* 41 279 (Sept 1) 1938

In 1936 Dick cited a case of unusual interest, that of an infant 2 weeks of age with a positive Frei test. Both the father and the mother were known to have lymphogranuloma venereum. Dick was of the opinion that intrauterine infection had occurred.

The authors cite one of their own cases in which a mother who had a severe form of the disease (positive Frei test) delivered an infant whose Frei test on the second and third days of life was negative. Examination of the placenta showed no lymphogranulomatous lesions.

The authors feel that the question of the hereditary transmission of lymphogranuloma venereum should be studied further and that the scanty data at hand permit no definite conclusions.

LAYMON, Minneapolis

ACUTE IODIDE ERUPTION FOLLOWING INGESTION OF SMALL AMOUNT OF POTASSIUM IODIDE IVAN M. WARTZKI, *M J Australia* 2:738 (Oct 29) 1938

A case of vesicopustular and bullous iodide eruption followed by death is described in a 66 year old man with advanced cardiac and renal disease. It occurred as a result of the ingestion of a small amount of potassium iodide, three doses of 0.3 Gm each.

The question arises whether the man had a peculiar idiosyncrasy to iodides which may not be explained by the defective elimination. Death may have been due, at least in part, to the constitutional disturbances accompanying the eruption.

A warning is sounded regarding the indiscriminate use of iodides in cases of cardiac and renal disease.

BAER, Pittsburgh

COMMENT CONCERNING QUESTION OF ERYTHEMA NODOSUM L. M. PAUTRIER, *Bull Soc franç de dermat et syph* 45:1046 (July) 1938

Pautrier states that he discussed the subject of erythema nodosum at great length with Debré, who defended the theory of internists and pediatricists, that tuberculosis is the predominant and perhaps the sole etiologic factor, while Pautrier held to the view of most dermatologists, that erythema nodosum is a symptom complex due to multiple causes. Pautrier explained the differences in opinion in the following way. Erythema nodosum seen by the pediatricist in infants has a tuberculous background in almost all cases, whereas the disease in adults, studied most frequently by the dermatologists, may be an accompaniment of diverse infections, such as syphilis, lepra and trichophytosis.

Pautrier believes that erythema nodosum and erythema multiforme in all probability possess the same pathogenesis, that they may represent a cutaneous sensitization, in different planes, to the same etiologic agents. He mentions the occurrence of erythema multiforme in 5 of 26 cases of erythema nodosum.

ERYTHEMA NODOSUM IN INFANT E. LESNÉ, *Bull Soc franç de dermat et syph* 45 1086 (July) 1938

From 1920 to 1938 the author observed 96 cases of erythema nodosum, which he regards as a definite sign of a primary tuberculous infection in the infant, equaling in importance the tuberculin reaction or phlyctenular conjunctivitis. In 50 per cent of the cases it was possible to find a source of tuberculosis within the family. In 95 of the 96 cases the tuberculin reaction became positive during the course of the eruption.

ERYTHEMA NODOSUM AND TUBERCULOSIS ROBERT DEBRÉ, Bull Soc franç de dermat et syph 45 1091 (July) 1938

The author states that during the past several years he has observed more than 150 cases of erythema nodosum, although only 50 were used as a basis for the present study. To Debré erythema nodosum is always tuberculous. In half the cases roentgenograms showed shadows diagnostic of a primary pulmonary infection. In about half the cases tubercle bacilli were discovered in the sputum or gastric contents, even without characteristic roentgen evidence in the chest. In 2 cases positive evidence of tuberculosis was obtained by inoculating tissue from the cutaneous nodules into monkeys. Tubercle bacilli were found in the blood in 4 cases. A source of tuberculosis was traced in about half the cases. The seasonal nature of erythema nodosum corresponds to similar seasonal variations in tuberculous pleurisy and meningitis. Debré believes that erythema nodosum is not an allergic manifestation of tuberculosis but an inflammatory lesion depending on the actual presence of tubercle bacilli in the nodules.

ETIOPATHOLOGIC STUDY OF THIRTY-EIGHT CASES OF ERYTHEMA NODOSUM E. RAMEL, Bull Soc franç de dermat et syph 45 1138 (July) 1938

In a long article the author expresses his views concerning erythema nodosum. His conclusions are as follows:

1 So-called idiopathic erythema nodosum is always a cutaneous manifestation of tuberculous bacillemia, in adults as well as infants. There is usually a primary infection, although in adults there may be a superinfection. From a biologic point of view erythema nodosum is a tuberculid—that is, an allergic manifestation produced by the hematogenous propagation of tubercle bacilli of modified virulence.

2 Symptomatic or secondary erythema nodosum is to be divided into two classes: (a) one clinically no different from the idiopathic type, with a tuberculous background and brought about by a biotropic mechanism like that occurring in syphilis or following childbirth, (b) one of toxic-infectious origin, homologous with true erythema nodosum but distinguishable by its etiologic agents (various bacteria, toxins and fungi). The terms erythema nodosum and dermatitis contusiformis should be reserved for only the first type, while eruptions of the other type should be designated as "id" eruptions (nodose trichophytids and the like).

ERYTHEMA NODOSUM AND POLYMORPHOUS ERYTHEMA H. GOUGEROT, Bull Soc franç de dermat et syph 45 1195 (July) 1938

After a long discussion Gougerot concludes that polymorphous erythema in its various types (purpuric, erythematous, papular, nodular, nodose) is a syndrome related to different bacteria (most frequently tubercle bacilli) acting on a sensitized terrain. This view explains the identity of the reactions to various causes, the evolution and the good prognosis, since polymorphous erythema represents a victorious defense reaction.

ACUTE VULVAR ULCER OF LIPSCHUTZ AS MANIFESTATION OF POLYMORPHOUS ERYTHEMA LUBIN POPOFF, Bull Soc franç de dermat et syph 45 1254 (July) 1938

Mucosal localization of erythema multiforme, such as ectodermosis plurifacialis erosiva, is rare. Acute vulvar ulcer is rare. *Bacillus crassus* has been shown to be a nonobligatory saprophyte in the latter condition. In many cases of acute vulvar ulcer *B. crassus* is not present. From his studies the author concludes that acute vulvar ulcer is one of the many manifestations of erythema multiforme and suggests that the latter disease is related to tuberculosis.

LUPUS ERYTHEMATOSUS IN INFANT AGED ELEVEN MONTHS FERNET P
WEISSENBAACH and LE BARON, Bull Soc franç de dermat et syph 45 1681
(Nov) 1938

The mother of the infant discussed in the report had been treated for lupus erythematosus at a previous time. Injections of bismuth and gold preparations resulted in complete healing. Later she brought her 11 month old child for examination, and it was discovered that the child too had lupus erythematosus on the face. Injections of a bismuth preparation caused the lesions to disappear. The child showed no evidences of tuberculosis.

TREATMENT OF CHANCROID WITH POWDER OF PARA-AMINO-PHENYL-SULFAMIDE
LEPINAY, Bull Soc franç de dermat et syph 45-1728 (Nov) 1938

The author comments on the brilliant results of sulfanilamide therapy of venereal diseases and states that the use of these drugs for chancroid is simple, painless and extremely effective. For early disease the drug is used as a local dusting powder, while for more advanced or severe involvement it is used both locally and by mouth. As a general rule lesions heal within a week, although the recent chancroids heal sometimes within three or four days.

HEALING OF PARAPSORIASIS AFTER INJECTIONS OF VITAMIN A A TZANCK, E
SIDI and J P PAILLAS, Bull Soc franc de dermat et syph 45.1818 (Dec)
1938

The patient was a man aged 57. Lesions of parapsoriasis of the plaque type were located on the chest. After a dozen intramuscular injections of vitamin A the eruption involuted.

LAYMON, Minneapolis

KONDO PRECIPITATION REACTION IN SYPHILIS Y IGA and M TOMATU, Lues
Bull Soc japon de syph 17.14 (June) 1938

In the Kondo precipitation test inactivated serum of the patient and cholesterolized extract of the heart of a plant-eating animal are used. The result may be read in one and one-half to two hours. It coincides in 90 per cent of cases with the result of the Wassermann and the Murata test.

RESULTS OF IDE TEST IN SYPHILIS K TEI, Lues Bull Soc japon de syph
17 18 (June) 1938

The author found that the Ide test, which is a color test, compares well with the Murata and the Wassermann test when whole blood or inactive serum is employed. The test with active serum gives a low percentage of positive reactions and occasionally an unspecific reaction.

PRODUCTION OF THERAPEUTIC RELAPSING FEVER BY ADMINISTRATION OF SPIRO-
CHAETA RECURRENTIS THROUGH MUCOUS MEMBRANES T YAMASHITA, Lues
Bull Soc japon de syph 17-31 (June) 1938

The author found that a suspension of Spirochaeta recurrentis administered by rectum in the form of an enema produces high fever and two to seven recurrent attacks of fever after an incubation period of one to three days. For the purpose of fever therapy he recommends this method of administration in preference to the oral or the subcutaneous method.

BY-EFFECTS OF ARSPHENAMINE S MATSUMOTO, Lues Bull Soc japon de syph
17-111 (Aug) 1938

Among 3,016 patients treated with arsphenamine, eruptions including immediate reactions and early morbilliform and scarlatiniform and late exfoliative eruptions

developed in 112. In some patients jaundice developed simultaneously. An eruption like keratosis follicularis (Darier) developed in 1 patient, in another there was an erythema nodosum-like eruption on both legs, and a third presented erythematous edema of both upper extremities after the fifth injection.

The author considers the present methods of testing the toxicity of arsphenamine in mice not reliable because (1) toxicity in mice does not parallel that in human beings, (2) mice are hypersensitive to an excess of alkalis, and (3) they react differently in the different seasons. He states further that values for the toxicity of arsphenamine determined by tests of hepatic function in rabbits are not reliable for human beings.

The present day prophylaxis and treatment of by-effects of arsphenamine with sodium thiosulfate, dextrose, vitamin C and amino-acetic acid are lacking experimental and clinical justification.

SOME PROBLEMS IN EXPERIMENTAL SYPHILIS S. MATSUMOTO, *Acta dermat* **31** 51 (April) 1938

The author discusses some problems of experimental syphilis. For the purpose of investigating problems of immunity the methods of reinfection and superinfection are used. The quantitative inoculation method permits the determination of the spirochetal content of the organs. Immunity to syphilis varies according to the different animals used. The author considers "chancre immunity" in rabbits as an expression of acquired immunity and symptomless reinfection as a sign of weak but not absent immunity. The author considers the so-called flaring up reaction in healed inoculation chancres of animals which have been treated and reinfected intravenously with a suspension of spirochetes specific and related to the Shwartzman phenomenon. This reaction may be used to differentiate syphilis from frambesia. It has been observed also after intravenous superinfection.

Inoculation chancres and general eruptions produced in animals are almost identical with those in men. They also respond promptly to antisyphilitic therapy. The animals, however, may harbor spirochetes in the lymph glands and spleen for a long time. No syphilis of the nervous system or congenital syphilis was observed in animals.

Syphilitic manifestations depend on the species, the age of the animal, the dose and method of inoculation and the season. Internal factors may also play a role. Acidosis favors involvement of the bones, while lipoidosis inhibits the inoculation lesion. The author counsels caution in applying the results obtained in experimental syphilis to syphilis in men. Although experimental syphilis in animals has brought out many interesting facts, it has not aided directly the investigation of human syphilis.

Numerous dyes have been found to stain the pale spirochete better and more rapidly than Giemsa stain. It is not possible to differentiate by means of staining between *Spirochaeta pallidula* and *Spirochaeta cuniculi*.

It is still doubtful if leukoplakia has any relation to syphilis. In Japan genital precanceroses and cancer of the penis are much more frequently encountered than in other parts of the world. In the majority of cases carcinoma of the penis develops from precancerous lesions. Precancerous lesions develop almost exclusively from a phimotic prepuce.

STAINING OF SPIROCHETES IN SMEARS BY MEANS OF POTASSIUM PERMANGANATE SOLUTION K. ONO, *Acta dermat* **31** 69 (April) 1938

The author found that the spirochetes of syphilis are stained intensely with a 1 per cent potassium permanganate solution. Fixation of the smear is accomplished best with solution of formaldehyde U. S. P. At room temperature three to seven days is required for staining, or ten to twenty-four hours when the slides are put into an incubator at 60 C.

BLOOM, New York

FERMENT STUDIES IN BROWN-PEARCE CARCINOMA I AMYLASE IN THIS CARCINOMATOUS TISSUE AS WELL AS IN SOME ORGANS (LIVER, KIDNEY, MUSCLE, TESTICLE) AND IN SERUM OF RABBITS BEARING THIS TUMOR G MORI, *Acta dermat* 32:1 (Aug) 1938

The author studied the amylase content in Brown-Pearce carcinoma of rabbits and its metastases and in the noninvaded organs of the affected rabbits. In the tumor itself the amylase activity was weak in the non-necrotic tissue, more marked in half necrotic tissue and most marked in necrotic carcinoma tissue. The noninvaded liver and kidney did not differ greatly in their amylase content from the organs of noncarcinomatous rabbits. In the advanced and terminal stages, however, an increase in amylase activity was found in the liver and a decrease in the kidney. The presence of metastases in these organs did not change their amylase content. The muscle tissue of carcinomatous rabbits showed a marked decrease of amylase activity starting at the time of the development of the inoculation tumor and increasing continuously with the progress of the tumor. A slight difference of amylase activity was noted in the testicles. Of 25 carcinomatous rabbits, 14 showed a decrease in the amylase activity of the blood serum, this decrease started with the beginning development of the tumor and increased continuously with the greater nutritional disturbance produced by the carcinoma.

INFLUENCE OF ACIDOSIS PRODUCED BY ADMINISTRATION OF DEXTROSE ON SYPHILITIC LESIONS SEN NAGAI, *Acta dermat* 32:12 (Aug) 1938

In rabbits in which acidosis had been produced by administration of dextrose syphilitic inoculation lesions developed much earlier and were more pronounced than in control animals. On the front legs a pea-sized hard tumor developed frequently. After intravenous inoculation of spirochetes the generalized eruption developed much earlier and was more pronounced than on control rabbits. Besides the osseous lesion on the front legs one was noted in the supraorbital region. Earlier and more intense development of syphilitic lesions was noted also after paranasal osseous inoculation.

Society Transactions

AMERICAN DERMATOLOGICAL ASSOCIATION, INC

JAMES H MITCHELL, M D, *President*

Clinical Meeting, San Francisco, June 8, 1938

FRED D WEIDMAN, M D, *Secretary*

Epidermolysis Bullosa Presented by DR MIRIAM TRIVOR-ROFFER MAYNARD, San Jose, Calif

B D, a white girl aged 2½ years, is presented because of vesiculobullous lesions which rupture and leave superficial crusted erosions. They have occurred since birth, mainly about points subject to friction and trauma, such as the tips of the fingers, the elbows and the heels.

She was presented before the San Francisco Dermatological Society on Sept 27, 1935 (ARCH DERMAT & SYPH **34** 140 [July] 1936). She was treated with local soothing and antiseptic ointments and protective bandages up to Aug 18, 1936. At this time many severe ulcerative lesions were present on the feet, backs of the legs, abdomen and hands. She then was given enteric-coated tablets of anterior pituitary. On Sept 1, 1936, she was considerably better. This therapy was continued until September 29, at which time she was relapsing somewhat. She was not seen again until the present time.

Epidermolysis Bullosa Presented by DR N N EPSTEIN, San Francisco (for the Department of Pediatrics and the Division of Dermatology of the University of California Medical School)

A B, an Italian baby aged 7 weeks, was in good general condition and weighed 7 pounds 1½ ounces (3,218 Gm) at birth. The mother is 21 years old, and the pregnancy was uneventful except for mild plevitis. Labor lasted four hours, and delivery was spontaneous. One sibling is alive and well and has had no cutaneous abnormalities.

Physical examination an hour after birth revealed clubbed feet. On both ankles and feet there were circumscribed sharply defined depressed smooth reddened areas in which there was an apparent lack of skin. The surface consisted of a thin layer of tissue through which could be seen the blood vessels of the underlying subcutaneous tissue. A bulla 1 cm in diameter was present on the dorsum of the left index finger. It was filled with clear fluid. On the dorsum of the right index finger was evidence of a recently ruptured small bulla. The mucous membrane of the mouth and tongue had sloughed, leaving a raw, reddened surface.

Since birth gradual improvement has occurred. There has been however, a slough of the distal phalanx of the right great toe. Bullae have also appeared on the elbows, knees, fingers, ears, back and abdomen.

The mother's Wassermann reaction and that of blood from the umbilical cord were negative. The blood count was normal. Roentgenograms showed no abnormalities of the bones of the legs or feet or of the chest or lumbar part of the spine. The thymus was not enlarged.

Dermatitis Herpetiformis (Bullous Dermatosi of Childhood [Bowen])

Presented by DR H J TRAMPTON, Oakland, Calif

A H, a white boy aged 9 years, has had a generalized vesiculobullous eruption for over three years. Extensive clinical and laboratory studies, including urinalyses, blood counts, Wassermann tests, examinations of stools, blood cultures and electrolytic tests of blister fluid, have failed to reveal anything significant.

Numerous therapeutic procedures have been tried without apparent result. This patient has been presented twice before the San Francisco Dermatological Society, on April 17, 1936 (ARCH DERMAT & SYPH 36:464 [Aug] 1937) and Sept 18, 1936 (ibid 36:658 [Sept] 1937). Since the onset he never has been entirely free from blebs. However, the lesions are gradually decreasing in number. There has been no great disturbance in the general health or development of the patient.

Dermatitis Herpetiformis (Bullous Dermatosi of Childhood [Bowen]).

Presented by DR H J TEMPLETON, Oakland, Calif

R C, a white boy aged 3 years, entered the Alameda County Hospital with a history of an eruption of one week's duration, associated with two attacks of vomiting at the onset. There was no history of other recent illness or of vaccination. The past and family history were unimportant.

Inspection revealed a well developed and well nourished boy, apparently not acutely ill. His body and extremities were covered with crusted lesions varying in diameter from 5 mm to 2 cm. A few primary lesions, vesicles and blebs, were present. An initial diagnosis of impetigo contagiosa was made, and treatment with methylosaniline (gentian violet), ammoniated mercury ointment and baths of solution of sodium hypochlorite was prescribed.

There was little change for two weeks, a few new lesions continually appeared. Then suddenly a shower of new vesicles and bullae developed, mostly on the trunk. They at first appeared to arise from normal skin, but a faint erythematous halo developed within twenty-four hours. The contents, at first clear serum, became purulent within twenty-four to forty-eight hours. There was a tendency toward grouping. Apparently there was little pruritus. At present the process is still active on his extremities but has cleared somewhat on the genitals, abdomen and thorax.

He was rather toxic during the second week of observation, but now he feels well. The temperature has ranged from 100 to 102 F and the pulse rate from 100 to 120. Conjunctivitis developed eleven days after entry, but this has disappeared.

Examinations by the pediatric and otolaryngologic services have disclosed nothing of interest.

Urinalyses have given normal results. Blood counts on two occasions showed 18,500 and 19,400 leukocytes. Differential counts were normal. There was no eosinophilia. Cultures of material from the nose, throat and rectum were normal. Cultures from untreated blebs showed beta hemolytic streptococci and Staphylococcus aureus. The Wassermann reaction was negative.

The administration of sulfanilamide for three days did not alter the appearance of the eruption.

The bullous character of the eruption, its occurrence in childhood, the absence of polymorphism and the relative absence of pruritus conform to the findings of Bowen in his cases of bullous dermatosis of childhood.

DISCUSSION OF BULLOUS ERUPTIONS IN CHILDHOOD

DR JOSEPH GRINDON, St Louis. I think A H and R C have dermatitis herpetiformis. The condition is somewhat different from the ordinary type, but in early childhood the epidermis is not so firmly attached to the cutis as it is later in life. This may account for the much larger lesions.

DR CLARK W FINNERUD, Chicago. I have seen several children about the ages of A H and R C for whom a diagnosis of dermatitis herpetiformis has been accepted by all concerned. The picture differed from that in these cases only in that the lesions were not pustular. The children were extremely high strung. After they had ingested large amounts of solution of potassium arsenite the condition eventually cleared, and the skin and general health were subsequently unimpaired.

DR FRED D WIDMAN, Philadelphia. I believe the condition of A H and R C has been described under the name hydroa puerorum by the British and

is considered as a modified form of dermatitis herpetiformis. In the case of A B a remarkable destruction of tissue has taken place around the feet. The picture of the child in the earlier stage made me think of a forme fruste of Ritter's disease. I noticed in the photographs that there was dermatitis on the face, which is consistent with Ritter's disease. In any event, the condition is not typical.

DR DONALD M PHIBSBURY, Philadelphia. I have observed a number of cases of this type in the Children's Hospital in Philadelphia. I think that Dr F C Knowles some years ago in an article on dermatitis herpetiformis in children (*J Cutan Dis* 25 247, 1907) pointed out the fact that in many of these cases the lesions undergo spontaneous involution. Recently in 2 cases of bullous eruptions in children associated with sensitivity to iodides I attempted desensitization with small increasing doses of iodides by mouth, without any success.

DR H J TEMPLTON, Oakland, Calif. In 1905 J T Bowen presented a series of cases of bullous eruptions occurring in children who had been vaccinated shortly before the disease appeared (*J Cutan Dis* 19 401, 1901). Later he presented another series in which only half of the children had been vaccinated (*ibid* 24 110, 1906). He regarded these postvaccinal bullous dermatoses as variants of dermatitis herpetiformis. He noted certain differences from dermatitis herpetiformis in adults, viz, there is not as much multiformity, the lesions being mostly bullous, there is less pruritus, there is a tendency to spontaneous but slow recovery. Although my patients had not been vaccinated prior to the onset of their eruptions, I believe they present all the criteria for a diagnosis of dermatitis herpetiformis of the Bowen type.

Necrobiosis Lipoidica Diabeticorum Presented by DR L R TAUSSIG, San Francisco (for the Division of Dermatology of the University of California Medical School)

D S P, an American housewife aged 19, was first seen in September 1934 when a diagnosis of diabetes mellitus was made. She had been known to have diabetes since the age of 12 years. From 1934 to 1938 her course has been somewhat stormy, owing to frequent occurrences of coma, for which she has been hospitalized on several occasions.

This patient entered the dermatologic clinic on April 8, 1938, complaining of lesions on her left leg of four months' duration. Examination showed two lesions. The upper was a fairly superficial indurated area about 2 cm in diameter and somewhat purple. The lower one was about 7 cm in diameter and consisted of diffuse erythematous induration, duller in the center, with some scaling. It was moderately tender. Between the upper and the lower lesion there was a circumscribed area of slightly tender subcutaneous induration but no change in the skin. Physical examination was otherwise essentially normal.

At present she is on a diet consisting of 150 Gm of carbohydrate, 40 Gm of protein and 80 Gm of fat and is receiving three daily doses of crystalline insulin, of 40, 15 and 40 units.

Urinalysis showed a trace of sugar. Microscopic examination showed that the epidermis was unchanged. There was some perivascular infiltration in the upper part of the corium, the collagen was moderately swollen, and the intercellular spaces were widened. A homogeneous eosin-staining area occupied almost all of the lower part of the corium and the subcutaneous tissue. This area was broken up somewhat by many small vessels, whose walls showed thickening with obliteration of the lumen and extensive perivascular infiltration.

A Case for Diagnosis (Poikiloderma Atrophicum Vasculare? Scleroderma?) Presented by DR HOWARD MORROW, San Francisco (for the Division of Dermatology of the University of California Medical School)

E B L, a woman aged 54, a native of Central America, presents widespread areas of depigmentation, atrophy and telangiectasia associated with generalized pruritus, stomatitis and diarrhea. She previously was presented before the San

Francisco Dermatological Society on Dec 3, 1937 (ARCH DERMAT & SYPH 38.140 [July] 1938) and before the joint meeting of the San Francisco and Los Angeles societies on Feb 12, 1938 (ibid 38.504 [Sept] 1938) Her condition remains unchanged

DISCUSSION

DR HOWARD FOX, New York I was asked if I thought this condition was pinta In my opinion it is not pinta, for several reasons In the first place, there is no bluish pigmentation (I examined the patient from head to foot) Secondly, the Wassermann reaction was negative In the third place, the patient came from Guatemala twenty years ago, and this eruption has been present for only twelve years This leaves a period of eight years in this country prior to the development of the eruption, which excludes pinta She certainly has a good deal of pigmentation Whether the remainder of her skin, which is brownish, presents hyperpigmentation or her natural color I do not know She has had, I understand, a good deal of ultraviolet irradiation

DR FRED WISE, New York Two cases of a similar involvement have been demonstrated before dermatologic societies in New York under the diagnosis of anomalous pigmentary changes of unknown origin

An almost exact replica of the clinical appearance of the eruption here presented may be found in the article by Habermann in J Jadassohn's hand book (Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1931, vol 4, pt 2, p 859)

A Case for Diagnosis (Infiltrated Scaling Plaques of Legs, Thighs and Elbows, Followed by Atrophy). Presented by DR H E MILLER, San Francisco (from the Division of Dermatology of the University of California Medical School)

H C, a white woman aged 25, presents infiltrated symmetric reddish blue coalescing plaques topped by scales and crusts on the legs, posterior parts of the thighs, buttocks, knees and elbows Some show superficial central ulceration Between the areas of activity the skin shows telangiectasia and atrophy The condition has been present for fifteen years Microscopically, sections showed parakeratosis, thinning of the rete and almost complete obliteration of the basal layer There was an increase in the number and dilatation of the vessels throughout the corium, with considerable diffuse chronic inflammatory reaction in the upper portions This appeared in denser collections separated by bands of collagen fibers in the lower part of the corium This patient was presented by Dr Frances Torrey before the San Francisco Dermatological Society on April 22, 1938 (ARCH DERMAT & SYPH 38.1002 [Dec] 1938) No appreciable change has occurred since then

DISCUSSION

DR FRED WISE, New York The lesions overlying the shoulder and clavicles are analogous to those described by J Csillag (in Neisser, A, and Jacobi, E Ikonographia dermatologica, Berlin, Urban & Schwarzenberg, 1909, vol 4, p 147) under the title dermatitis lichenoides chronica atrophicans Lichen albus of Zumbusch probably belongs in the same category

DR OLIVER S ORMSBY, Chicago The only patients I have seen with lichen albus of the type just described presented no evidence of hypertrophic lesions, which in some areas in this case are pronounced Taking it all together, hypertrophic lichen planus would seem to fit the picture best

DR H E MILLER, San Francisco The diagnosis of hypertrophic lichen planus was considered seriously, but it was felt that the histologic picture ruled it out Perhaps it would be wise to perform another biopsy

A Case for Diagnosis (Dermatitis Repens? Acrodermatitis Continua of Hallopeau?). Presented by DR C J LUNSFORD, Oakland, Calif

F E M, a white woman aged 54, first seen on Feb 1, 1938 states that she has had an eruption limited to the skin of her left thumb for about twenty-five

years. At first the lesions would clear under simple local therapy and recur only after several years. Later the flare-ups occurred every few months. The patient states that the skin would be perfectly normal in the meantime. Sometimes the lesions began as simple pustules and at other times as paronychia. She felt perfectly well otherwise.

Over the nail bed, tip and flexor surface of the left thumb was a red tense edematous inflammatory reaction covered by glazed, shiny epidermis. Over the thenar eminence were pea-sized deep-seated pustules with reddened bases. There was extreme tenderness.

Dr A. P. Krueger, of the department of bacteriology at the University of California, after several noncontributory examinations obtained a positive culture from a pustule on the thumb. The organisms cultured were microaerophile type gamma streptococci and a nonhemolytic type of *Staphylococcus aureus*. Wassermann and Kline tests and urinalyses gave negative results. Repeated examinations both microscopic and cultural, for fungi gave negative results. Roentgenograms of the teeth showed multiple apical abscesses. The infected teeth were guardedly extracted and material from them sent to Dr Krueger for culture. His findings included type alpha hemolytic streptococci, microaerophile type alpha prime hemolytic streptococci and *Staphylococcus aureus* haemolyticus.

Local treatment has included wet compresses of sodium chloride, solution of boric acid and solution of mercury bichloride. Ammoniated mercury ointment also has been used at various times. Her present local treatment is with 15 per cent sulfur ointment.

Dr Krueger prepared a lysate on the two occasions of the cultures. This has been applied locally without benefit. At the time the lysate was used the other drugs were withdrawn. I have been attempting to desensitize the patient by using an autogenous vaccine obtained from Dr Krueger's culture of material from the skin. This later was combined with the vaccine made from the culture of material from the teeth. These vaccines have been given three times a week, the dose beginning with 0.01 cc intradermally and gradually increasing as conditions permitted. She now is able to tolerate 0.1 cc of the vaccine without a local or focal flare-up.

The patient's condition now is about as it was when I first saw her, four months ago. There have been flare-ups and remissions, apparently uninfluenced by treatment.

F. E. M. has just undergone a thorough general physical examination by Dr Fletcher Taylor, Oakland, Calif. Infected tonsils were found.

Diagnoses considered include (a) local bacterial infection of the skin, (b) pustular bacterid, (c) pustular psoriasis (no lesions of psoriasis elsewhere), and (d) fungous infection (no microscopic or cultural evidence).

DISCUSSION

DR GEORGE C. ANDREWS, New York. This patient presents a picture which I think is clinically acrodermatitis continua, because of the bacteriologic findings and the localization on one finger over such a long period. It does not seem to be characteristic of either pustular psoriasis of the extremities, as described by J. T. Ingram (*Lancet* 2:13 [July 4] 1936) and H. W. Barber (*Proc. Roy. Soc. Med.* 26:329 [Feb.] 1933), or of the pustular condition which G. F. Machacek and I have described as a bacterid which begins on the palms (*ARCH. DERMAT. & SYPH.* 32:837 [Dec.] 1935). I do think, however, that this woman's tonsils should be taken out, on the bare chance that the operation might influence the condition. I myself had erysipelas about eight or ten times over a period of years until eventually I had my tonsils out. I had a mild attack of erysipelas the day after my tonsillectomy. In the ten or twelve years since then I have had no further attacks. I believe many people who have abscessed teeth, as she has, also have infected tonsils.

DR GEORGE M. MACKEE, New York. This eruption is difficult to diagnose. Acrodermatitis continua and dermatitis repens are progressive diseases—the lat-

ter usually, if not always, having an undermined edge. There are no distinct remissions and exacerbations. This eruption has no undermined edge, it is not definitely progressive, and there are remissions and exacerbations. According to the patient's statement, the skin is at times normal. The nail has exfoliated several times. Recurrence may begin as an inflammation near the nail or as a pustule in any area occupied by the previous eruption. Against the diagnosis of pustular bacterid and pustular psoriasis is the finding of pyogenic organisms in the pustules. I understand that repeated examinations for fungi have given negative results. The case does not look like one of malingering, but that possibility should be kept in mind.

DR JOHN BUTLER, Minneapolis. I agree that dermatitis factitia should be considered.

DR J GARDNER HOPKINS, New York. I should like to ask the presenter whether the organisms were identified on stained smears. I gather from the history that several cultures were made.

DR JOSEPH GRINDON, St Louis. I questioned the patient in regard to the continuous character of the eruption. I received the impression that she had no intermissions but only remissions during the twenty-five years it has been present.

DR C J LUNSFORD, Oakland, Calif. In answer to Dr Hopkins' question, the cultures were obtained with a great deal of difficulty.

Mycosis Fungoides Presented by DR G V KULCHAR, San Francisco (from the Department of Dermatology and Syphilology, service of Dr Harry E Alderson, Stanford University School of Medicine)

H W, a white woman aged 47, presents a profuse generalized erythematous-squamous eruption distributed in the form of well defined slightly elevated infiltrated plaques over the trunk, extremities and face. It has been present for nine years. She was presented at the joint meeting of the Los Angeles and San Francisco dermatologic societies on Feb 12, 1938 (ARCH DERMAT & SYPH 38:497 [Sept] 1938).

There has been no essential change since then.

DISCUSSION

DR PAUL A O'LEARY, Rochester, Minn. I saw this patient for the first time five years ago. She then presented clinical and histologic evidence of mycosis fungoides. There were approximately six early fungating lesions, in addition to the typical plaques seen in this disease. She was given twelve treatments in the Kettering-Simpson hyperthermy unit in conjunction with the intramuscular use of ethylchaulmoograte. Over 500 cc of ethylchaulmoograte was given, in doses of from 3 to 10 cc. Before coming under my care she had received considerable roentgen therapy on the West Coast. At that time there was extreme pruritus, while now there is little. Perhaps to many of the members the diagnosis of mycosis fungoides today would seem far-fetched. To me the therapeutic effect is striking. This case is the first in which I used ethylchaulmoograte and artificial fever, and from the result it would seem that a further trial of these agents is warranted.

Rhinoscleroma Presented by DR HARRY E ALDERSON, San Francisco (from the Department of Dermatology of Stanford University School of Medicine)

B, a white woman aged 31, was presented before the San Francisco Dermatological Society on April 17, 1936 (ARCH DERMAT & SYPH 36:466 [Aug] 1937). A more detailed report with photographs appeared in the ARCHIVES (36:1018 [Nov] 1937). There is extensive involvement of the skin on the face, as well as in the more usual locations on the nose, hard palate and upper lip.

Rhinoscleroma Presented by DR F G NOVY JR, Oakland, Calif (from the Division of Dermatology of the University of California Medical School)

T P G, a Central American man aged 27, is presented because of involvement of the nares, hard and soft palate and alveolar margin, resulting in loss of the anterior upper teeth. A nodule is also present on the skin below the left inner canthus. At one time the picture was complicated by the presence of virulent diphtheria bacilli, without evidence of clinical diphtheria. The patient was presented before the San Francisco Dermatological Society on Dec 4, 1936 (*ARCH DERMAT & SYPH* 36 1241 [Dec] 1937), and again by Dr John M Graves at



Fig 1 (T P G) —Rhinoscleroma

the combined meeting of the Los Angeles and San Francisco societies on Feb 12, 1938 (*ibid* 38 494 [Sept] 1938)

There has been continued improvement since then, presumably because of roentgen treatment (fig 1)

DISCUSSION OF CASES OF RHINOSCLEROMA

DR CHARLES C DENNIE, Kansas City, Mo I believe that the man, T P G, may have American leishmaniasis rather than rhinoscleroma, because of the extensive involvement of the upper jaw and other areas besides the nose. American leishmaniasis may be slow both in inception and in growth. There was a case in Kansas City, that of a Mexican, in which most of the face, including the upper and lower jaws and both eyes, was destroyed before death. I observed 2 or 3 cases at McGill University.

DR GEORGE M. MACKEE, New York I agree with the diagnosis of rhinoscleroma in Mrs B, but the involvement is the most remarkable that I have ever seen I have never known the disease to cover so much territory, especially so far from its original site in the nose and throat Another remarkable feature is that it at first was limited to the usual site and later involved the face in the areas which had been the site of a severe contact dermatitis It is unusual for rhinoscleroma to develop in previously irritated tissue as diseases such as lupus erythematosus and psoriasis so often do

DR HOWARD FOX, New York I agree entirely with Dr MacKee I think every one here must consider this condition most unusual I should like to ask the presenter whether in looking through the literature he has ever read of a similar involvement or has seen a photograph of rhinoscleroma of such extent on the cheeks

DR FRED D. WEIDMAN, Philadelphia The histologic picture of the lesion of patient T P G is not that of rhinoscleroma, the infiltration is almost purely of plasma cells, without any of the Mikulicz cells or Russell's fuchsin cells

DR HARRY E. ALDERSON, San Francisco There is one weak point in the case of Mrs B, I have never been able to obtain cultures of Frisch bacilli, although I have tried many times However, the bacilli showed up plainly in sections Originally the nose presented enormous lesions and the cheeks were entirely free The disease did not involve the cheeks until after the development of dermatitis venenata due to the application of nupercaine ointment by the roentgenologist during the administration of high voltage radiation directed at the palatal lesions The rhinoscleromatous lesions then appeared and spread rapidly in exactly those areas involved by the dermatitis The lesions on the eyelids are of recent origin The palatal lesion has subsided about one half The patient has had no roentgen treatment for a year

Keratosis Follicularis (Darier). Presented by DR N. N. EPSTEIN and DR E. A. LEVIN, San Francisco

A S, a white woman aged 44, was first seen on June 4, 1937, because of an eruption involving the entire body The condition is most severe in the groins and on the lower part of the abdomen, thighs and vulva The lesions form diffuse hyperkeratotic, warty patches In the most severe areas there are deep fissures bathed in a foul exudate The patient's general condition is otherwise normal Microscopic examination showed marked dyskeratosis and hyperkeratosis with considerable edema of the epidermis There was a moderate lymphocytic infiltration beneath the epidermis This patient was presented by Dr C. E. Schoff, of Sacramento, Calif, before the American Dermatological Association in San Francisco in 1929, with a diagnosis of keratosis follicularis (ARCH DERMAT & SYPH 21:684 [April] 1930) She is shown again today because of the great progression of the process since that time

Cutis Laxa, Abnormally Sensitive to Trauma Presented by DR DOUGLASS W. MONTGOMERY, San Francisco

R B, a white youth aged 18, complains of looseness of the skin and of extensive laceration in response to minor injury Laxity of the skin, scarring and hyperextensibility of the joints of the fingers and toes are demonstrated This patient was previously presented by Dr J. D. Viecelli at the joint meeting of the Los Angeles and San Francisco dermatologic societies on Feb 12, 1938 (ARCH DERMAT & SYPH 38:498 [Sept] 1938)

DISCUSSION

DR H. J. TEMPLETON, Oakland, Calif When this case was previously presented I suggested that it was an excellent instance of the Ehlers-Danlos syndrome This includes hyperelasticity and friability of the skin, extensive scarring and hypermotility and hyperextensibility of the joints

DR OLIVER S ORMSBY, Chicago This case is of interest to me for the reason that in April Dr W W Tobin and I presented a similar one before the Chicago Dermatological Society (*ARCH DERMAT & SYPH* 38 828 [Nov] 1938), and in May a second was shown. Extreme examples are not infrequently seen in museums. Two types of dermatolysis or lax skin are recognized. The first occurs in Recklinghausen's disease, in which large masses of skin may depend from the face, neck, arms or other points. Pigmentation and tumors may or may not be present. The second variety, that shown today, consists of congenital abnormal laxation and friability of the skin, together with loose flexible joints, especially of the thumbs (Ehlers-Danlos syndrome). In our patient numerous scars had been induced by trauma insufficient to injure normal skin. The vulnerability of the skin resembles that seen in epidermolysis bullosa, in which a slight bruise causes injury.

Our histologic examination showed the blood vessels to be tortuous, which allowed them to be stretched without breaking. The collagen occurred in small long fibrils in place of the usual broad bundles, and the elastic fibers appeared wavy and were apparently longer than usual. These observations were early recorded by Unna and Williams.

DR RICHARD S WEISS, St Louis I have under observation at the present time a patient presenting all these signs, including the pseudotumors. The latter are evidently the results of injury, and changes in the elastic tissue result in balloon-like scarring. Such patients sometimes get extensive ulceration from mild injuries. The resulting scarring is thin and tissue paper-like. It is inclined to balloon up and produce a bulging tumor-like mass that feels almost cystic. In my patient the findings are all more exaggerated than those in the patient presented here. There are a great many more scars and pseudocysts.

DR HOWARD FOX, New York As Dr Ormsby says, many persons with this extreme elasticity of the skin find their way into circuses. As a boy I remember seeing such a person. I also once saw a man who could actually pull his lower lip over his nose.

DR JAMES H MITCHELL, Chicago In discussing the disease before the Chicago Dermatological Society I called attention to the fact that in a recent number of a popular weekly picture magazine a man was shown who was able to put six golf balls in his mouth, showing a remarkable extensibility of that orifice. I also called attention to the passage in the memoirs of Dr George Henry Fox (*Reminiscences*, New York, Medical Life Press, 1926) in which he told of having difficulty in getting clinical material in the early days. He therefore borrowed material from the museum from time to time. One day he came in and, much to his surprise, his clinic was packed. He had borrowed a patient with cutis laxa for presentation and then discovered that the enterprising owner of the museum had been advertising this for weeks.

DR JOSEPH GRINDON, St Louis This boy had defective dentition. A lateral incisor, I think it was, had not erupted. That is another feature characteristic of the Ehlers-Danlos syndrome.

Hereditary Hemorrhagic Telangiectasia Presented by DR A E INGELS (from Stanford University School of Medicine, Department of Dermatology, service of Dr Harry E Alderson)

J M, an Austrian-Jewish furniture polisher aged 70, is presented because of widespread telangiectasia, involving the backs of the hands, arms, thighs, buttocks, legs, nose and cheeks. The mucous membranes are not involved.

Adherent subcutaneous masses were found in the buttocks at the first examination, and the Wassermann test was positive.

Since March 11, 1938, sodium bismuthate has been administered. The telangiectasia has not been altered by antisyphilitic treatment, but the gummatous lesions of the buttocks have continued to involute.

The patient was presented previously at the meeting of the San Francisco Dermatological Society on April 22, 1938 (ARCH DERMAT & SYPH 38:997 [Dec] 1938)

Infra-red photographs of the forearms are shown in contrast with ordinary photographs

DISCUSSION

DR RICHARD S WEISS, St Louis I do not think that this patient has Osler's hereditary telangiectasia. In Osler's disease there are telangiectatic lesions in the nose and mouth, and bleeding from these areas is frequent. My diagnosis would be a form of telangiectatic nevus. Nevi have a tendency to be hereditary also. If that is not the diagnosis, then I believe the condition belongs with the idiopathic atrophies with an unusual amount of telangiectasia.

DR RUBEN NOMLAND, Iowa City I agree with Dr Weiss that this picture is not Osler's disease as it is ordinarily considered. I believe, however, that the man does present a syndrome that has been described by Dr S W Becker, of Chicago, under the name generalized acquired telangiectasia (ARCH DERMAT & SYPH 14:387 [Oct] 1926).

Extracellular Cholesterosis of Urbach Presented by DR KENDAL FROST and DR C R ANDERSON, Los Angeles

This patient, a Mexican laborer aged 35, first noted about Nov 15, 1937, a soreness and tenderness, aggravated by motion, in the knees and popliteal spaces and on the ankles, feet, shoulders, elbows, wrists and fingers. In December he noted the development of small round yellowish brown elevated papules on the palmar surfaces of the fingers. These lesions became confluent, and the palmar surfaces became so thick and tender that the patient had to stop work. Within the next month or two similar lesions appeared over the backs of the hands and fingers, on both elbows and on the inferior surface of each buttock. Smaller isolated lesions appeared on the forearms, the left temple and the right side of the neck. The individual papules tended to increase in size and coalesce, forming yellowish brown plaques. The epidermis over these areas was thin, atrophic and crinkled and showed a superficial delicate scaling. There was a tendency to central involution, leaving central depressed areas. On diascopic pressure the infiltrated lesions showed a distinct underlying yellow color. In the center of some of the papules hemorrhagic necrosis occurred. These lesions healed, leaving depressed atrophic scars. Small hemorrhages varying in size from that of a pinpoint to that of a pinhead also occurred in some areas, especially about the nail folds and finger tips.

The past and family history were unimportant. Physical examination showed nothing abnormal but the cutaneous lesions and associated pain and stiffness of the joints. There were no mucosal lesions, and neither spleen nor liver was enlarged. The patient was hospitalized at the Santa Fe Coast Lines Hospital on December 13, for a tonsillectomy. From January to March 1938 he received forty intragluteal injections for arthritis. He was hospitalized again on March 11, and a tentative diagnosis of leprosy was made. I first saw him on March 18 and made a tentative diagnosis of xanthoma tuberosum. At that time involution had already begun in some of the larger plaques and the infiltration of the palms was somewhat less.

During hospitalization Wassermann, Kahn and Klein tests were normal. A blood count and urinalysis showed no abnormality. Scrapings from nodules and pharyngeal and nasal smears showed no leprosy bacilli. A dextrose tolerance test gave a normal result. The uric acid content of the blood was 2.6 mg per hundred cubic centimeters. The basal metabolic rate was +22 per cent. The blood cholesterol content was 80 mg per hundred cubic centimeters on March 22, and on March 25, 102.5 mg, control blood showed 133.3 mg per hundred cubic centimeters. Roentgen studies were made by Dr D R MacColl. Those of the chest

showed slight pleural thickening over the apexes of both lungs and a moderate amount of hilar scarring but no evidence of active disease. Stereoscopic roentgenograms of the skull were normal. Films of both hands showed only some thinning of the cartilages of all the interphalangeal joints and some demineralization of all the bones—probably an atrophy of disuse.

Microscopic examination of sections of a lesion from the right elbow showed relative and absolute hyperkeratosis of the epidermis. Portions of the epidermis appeared normal, but other portions showed vacuolation of the cells of the rete and stratum basale. A decided cellular infiltration between the collagen fibers extended from the papillary bodies down into the lower portions of the cutis. In the central portions of the lesion the infiltrate was almost solid. Along the borders it was arranged in a perivascular manner. It consisted of proliferated mesenchymal cells of the perivascular spaces, mononuclear cells, fibroblasts, polymorphonuclear leukocytes, a few eosinophils and nuclear and cellular debris. In some of the areas more severely involved there were degenerative changes in the connective tissue fibers, with rarefaction, fragmentation and tinctorial changes. In various parts of the section there were vascular dilatation, endothelial swelling and proliferation, perivascular fibrosis and narrowing of the lumens of the vessels. Nowhere was there evidence of so-called xanthoma cells.

Sudan III stain showed small brownish red droplets heavily scattered throughout the section. These for the most part were extracellularly disposed, although some of the fat droplets were to be seen in the capillary walls and occasionally apparently also in some of the connective tissue cells.

NOTE—Subsequently the active lesions on the skin were treated with fractional doses of roentgen rays, resulting in fairly rapid absorption. A few months later the man died. At autopsy none of the fat deposits were demonstrable in any of the tissues. There was a retroperitoneal lymphosarcoma, with involvement of the intestines, and multiple perforations of the small intestine.

DISCUSSION

DR FRED D WEIDMAN, Philadelphia. Clinically the individual lesions are compatible with extracellular cholesterosis, and I accept that diagnosis. The distribution preeminently over the shins does not appear in this patient, however. By now the frozen sections have faded. I understand, though, that at one time they did exhibit the material in proper position.

DR KENDAL FROST, Los Angeles. Until further studies are made it would probably be better to call the disease lipoidosis. It seems to correspond to C W Laymon's description of cholesterosis (*ARCH DERMAT & SYPH* 35:269 [Feb] 1937), however.

Hydroa Vacciniforme Presented by DR MFRLIN TREVOR-ROPER MAYNARD, San Jose, Calif (from the Department of Dermatology of Stanford University School of Medicine, service of Dr Harry W Alderson)

A S, a white boy aged 15 years, was first seen on April 26, 1937. Three days after he was vaccinated, at the age of 4 years, an eruption appeared. This has recurred frequently since then, usually following exposure to sunlight, cold and wind.

When I first saw him the face, ears and backs of the hands were covered with purulent bloody crusts. Considerable secondary infection was obviously present. This was easily controlled with dressings of ammoniated mercury ointment. The eruption has cleared entirely at different times when he has stayed indoors all day long. Exposure outdoors has resulted in recurrences, however. The use of an ointment containing quinine and one containing dihydroxyquinoline sulfate seemed to afford some protection. Treatment other than this, including roentgen irradiation, exposures to ultraviolet rays, the use of autogenous vaccine, elimination diet and

administration of sodium gold thiosulfate and of capsules of pancreatin, was of no apparent help. On May 20, 1937, he was tested with a series of light filters, borrowed from Dr H J Templeton, of Oakland, Calif, to determine reactions to light of various wavelengths. His back was exposed through these filters for one-half hour in intense sunlight on the top of an office building. Twenty-four hours later none of the areas had reacted except the area where no filter was used, and this reacted with normal sunburn. This suggests that the sensitivity was more or less local.

Urinalysis showed no porphyrin. A blood count was normal except that the differential count showed 11 per cent monocytes.

DISCUSSION

DR DONALD M PILLSBURY, Philadelphia. I believe it was recorded in the protocol that this boy showed no porphyrin in the urine. I should like to point out that apparently in many cases the amount of porphyrin in the gastrointestinal tract may be of more importance. Erich Urbach has recently published an article describing a number of cases of light-sensitive dermatoses in which there were bacteriologic disturbances of the gastrointestinal tract (*Klin Wchnsch* 17 304 [Feb 26] 1938). These included a suppression of the colon group and the presence of large numbers of streptococci. Some of the patients responded to the feeding of colon bacilli. Dr Stokes has observed a case of similar involvement recently. Porphyrin is normally present in the gastrointestinal tract—I believe in the form of coproporphyrin. In this disease, however, there may be a marked increase in this and other forms of porphyrin. Apparently this may be caused by organisms which are capable of synthesizing these substances in the gastrointestinal tract.

DR PAUL A O'LEARY, Rochester, Minn. The Mayo Clinic's efforts to evaluate the significance of porphyrins in the various dermatoses have been rather disappointing, especially in patients with light sensitivity. Uroporphyrin is apparently a unique and rare substance which is difficult to obtain. My associates and I have been working with coproporphyrin, which is demonstrable in the feces and urine. In practically none of the patients with light sensitivity were we able to demonstrate coproporphyrin to any extent, in fact, with many other dermatoses coproporphyrin is present in greater amounts. Accordingly it would appear that the porphyrins are not the etiologic agents in light sensitivity, as they have been thought to be for several years.

Carcinoma of Fauces Presented by DR A E INGELS, San Francisco (from the Stanford University School of Medicine, Department of Dermatology, service of Dr Harry E Alderson)

J J P, a white laborer aged 47, was first seen May 19, 1938, because of a swelling of his neck noted a week before. He stated that he smoked one-half sack of tobacco and drank 5 or 6 ounces (150 to 180 cc) of liquor daily. He had had gonorrhea in 1915 and again in 1921, it cleared without residual symptoms. He had sexual intercourse two months ago but has noted no penile lesion, cutaneous rash or falling of the hair. The swelling of his neck was accompanied by cough, sore throat and dysphagia. He was seen elsewhere, and a dark field examination of material from his throat was reported as showing spirochetes. The Wassermann reaction of his blood was negative. An injection of neoarsphenamine was given.

When I first saw him, his tongue was coated and the mucosa of the mouth generally inflamed. The tonsils, soft palate, uvula and fauces were occupied by ulcerated fungating masses which were firm to palpation. The submaxillary glands were swollen. His hands presented a dermatitis suggesting pellagra. A generalized maculopapular eruption suggesting a "toxic" origin was present. Both of these manifestations have now largely cleared. There is no history of ingestion of drugs other than neoarsphenamine. Dark field examination showed only

spirilla of Vincent The Wassermann reaction has been repeatedly negative Cultures of material from the throat showed a predominating growth of *Streptococcus viridans* Smears showed many fusiform bacilli and spirilla

Microscopic examination showed the growth to be squamous cell carcinoma Roentgen treatment has been started

DISCUSSION

DR BEDFORD SHELMIER JR, Dallas, Texas I believe the dermatitis on the hands is typical of pellagra The man is probably not eating properly because of the extensive lesion in the throat

A Case for Diagnosis (Darier's Disease?) Presented by DR ERVIN EPSTEIN, Oakland, Calif

L B, a white boy aged 16, is presented because of translucent firm hyperkeratotic papules on the forehead, cheeks, elbows and knees He was presented before the San Francisco Dermatological Society on April 22, 1938 (ARCH DERMAT & SYPH 38 998 [Dec] 1938)

Since then the circular outlines of the patches have disappeared, owing to the development of new lesions in the hitherto clear centers, and new lesions have appeared on the arms and thighs He has received two blood transfusions, and the lesions now appear much redder than before Recently several pustular lesions have appeared In addition to the laboratory work previously reported, intradermal tests with 1:1,000 dilutions of human and of bovine tuberculin gave negative results Chemical studies of the blood gave the following results

Nonprotein nitrogen	120.0 mg per 100 cc
Creatine	2.2 mg per 100 cc
Serum albumin	5.01 mg per 100 cc
Serum globulin	2.0 mg per 100 cc
Carbon dioxide-combining power	29 vol per cent
Chlorides	555.8 mg per 100 cc
Calcium	6.5 mg per 100 cc
Phosphorus	7.27 mg per 100 cc
Phosphatase	16 units

The Ko'mer and the Kahn reaction of the blood were negative Roentgenograms of the long bones showed renal rickets

Microscopic sections stained with hematoxylin and eosin are presented Stains for amyloid gave negative results

DISCUSSION

DR HOWARD FOX, New York Was Darier's disease ruled out histologically?

DR JAMES H MITCHELL, Chicago The diagnoses that were discussed at the meeting of the San Francisco Dermatological Society included Darier's disease, avitaminosis, xeroderma pigmentosum and tuberculid

DR GEORGE M MACKEE, New York The clinical diagnosis is Darier's disease I could not identify the disease histologically, however, from the sections I saw

DR H N COLE, Cleveland This peculiar eruption reminds me somewhat of that described by C Frazier and Ch'uan-K'uei Hu (*Arch Int Med* 48 507 [Sept] 1931), associated with a lack of vitamin A The boy also gave a history of not eating well

DR FRED D WEIDMAN, Philadelphia I agree with Dr MacKee that a keratinous plug can be seen in most of the lesions on the forehead However, in the histologic section there is nothing that conforms to the picture of keratosis follicularis I suspect that the sections are not representative of the clinical lesions and that if another biopsy specimen were taken it would show the histologic picture of Darier's disease

DR PAUL A O'LEARY, Rochester, Minn My thoughts in regard to this patient are different from those expressed so far I believe this boy has disseminated xanthomatosis

DR HOWARD FOX, New York I have not seen Dr Frazier's patients with avitaminosis, but I have seen a number of examples of a similar condition in the tropics, especially in Yucatan The pediatricians in that country are familiar with the eruption It looks more or less like ordinary keratosis pilaris

A Case for Diagnosis (Generalized Macular Eruption) Presented by
DR N N EPSTEIN and DR E A LEVIN, San Francisco

B S, a youth aged 17, was first seen on March 29, 1938, because of a generalized eruption extending from the neck to the feet The lesions consist of numerous macular areas about 1 to 1.5 cm in diameter, some slightly redder than others Several show a slight scale They are asymptomatic The lesions do not swell on friction A blood count and urinalysis were normal The Wassermann and the Kahn test were negative After a moderately severe generalized sunburn, the eruption apparently disappeared, but has recurred since On clearing, many lesions leave depigmentation and apparent atrophy

Microscopic study showed parakeratosis, with some edema of the epidermis and a moderately dense infiltrate of lymphocytes in the corium There was considerable increase in pigment Sections stained to demonstrate mast cells showed none

DISCUSSION

DR OLIVER S ORMSBY, Chicago The most likely diagnosis is parapsoriasis The distribution of a macular slightly scaling disease with no subjective sensations and comparatively long duration are all favorable to this diagnosis Occasionally the picture resembles maculopapular syphiloderm clinically, but in this instance the long duration and lack of concomitant symptoms rule out syphilis

DR CLARK W FINNERUD, Chicago I came to the conclusion that the condition must be an unusual example of parapsoriasis Pityriasis rosea is suggested by the configuration of the lesions and a few macular lesions that showed central clearing I understand that syphilis has definitely been ruled out Recently I have observed a case of phenolphthalein eruption which closely resembled that seen here The largest lesions—and they were numerous—were the size of finger nails The disease had been present six or eight months The patient gave a history of having begun to take "ex-lax" shortly before its onset Although I did not question him, I wondered if dermatitis medicamentosa had been considered

DR N N EPSTEIN, San Francisco We obtained no history of ingestion of drugs

Lymphoblastoma (Leukaemia Cutis?) Presented by DR C J LUNSFORD,
Oakland, Calif

H K, a white man aged 61, was referred by Dr Leland H Taylor, Oakland Calif

When the patient was a child of 6 or 7 years, chorea developed About thirty-five years ago, for two or three years he had a vesicular eczema ("salt rheum") of the webs and sides of his fingers This disappeared without any particular treatment About thirty years ago a persistent erythema developed on the upper and inner parts of the thighs There was no scaling and no symptoms About twenty-five years ago several Wassermann tests of the blood were made because of nervousness and various phobias The results were negative In spite of this he received three injections of arsphenamine and two of neoarsphenamine and three years of subcutaneous injections every other day of a drug the name of which he does not know

It was during the year following these injections that dryness and scaling, but no erythema, began to develop on the ankles and the outer aspects of the legs

This spread slowly and did not itch. About ten years ago it developed on the thighs and continued to spread until it included the entire body except the face and hands.

Shortly after this infiltrated papules began to develop on various parts of the skin. These have gone on to central necrosis and eventual involution, leaving depigmented atrophic scars. New ones have continued to develop. About a year ago erythema first appeared about the ankles and rapidly spread to other parts of the body. It has become much worse during the last three months. During this time there have been varying degrees of itching.

About two months ago pain developed in the right shoulder, radiating from the base of the neck down the right arm. This was associated with numbness and stiffness of the right thumb and index and middle fingers, which have forced him to discontinue his work as a box and crate maker for the first time.

For years the patient's mouth has been periodically sore and inflamed. Small indolent ulcers with yellowish necrotic centers have appeared in various locations on the buccal and lingual mucosa.

At present the skin presents a generalized dry infiltrated lichenified exfoliating erythroderma. Superimposed on this are multiple pea-sized papules, some of which show beginning necrosis. In others the necrosis is more advanced and may be expressed as a firm black central plug. There are also innumerable white atrophic scars. In the mouth are several small reddened papules and ulcers. There is generalized lymphadenopathy, dominant in the inguinal region, where some of the glands are the size of a walnut. The liver and spleen are not palpable.

Microscopic examination of sections of skin and of a lymph node was reported by Dr. Paul Michael, of Oakland, Calif., as showing some acanthosis of the epidermis. Throughout the corium were closely packed large clear cells, oval and round and intermixed with old blood pigment. The lymph node showed a thickened capsule with a fairly well preserved architecture. The sinuses were engorged with fresh and old blood pigment, and the capillaries traversing the node were distended with blood. There was an intense reticulum cell hyperplasia. The lymph follicles were numerous, and the germinal centers showed hemorrhagic infiltration. Dr. Michael concluded that the microscopic structure of the skin and the lymph node were compatible with a diagnosis of leukemia.

A sternal puncture was done by Dr. Michael, who reported the differential count on the bone marrow to show: neutrophil leukocytes 15 per cent, eosinophil leukocytes 3 per cent, basophil leukocytes 1 per cent, stab nuclears 15 per cent, metamyelocytes 3 per cent, myelocytes 10 per cent, myeloblasts 2 per cent, monocytes 3 per cent, lymphocytes 36 per cent and lymphoblasts 12 per cent. He felt that this bone marrow picture was not in keeping with myelogenous leukemia but could fit in with a lymphatic type of leukemia.

On April 24, 1938, a blood count showed 5,000,000 erythrocytes and a hemoglobin concentration of 90 per cent. There were 38,200 leukocytes. A differential count showed 76 per cent polymorphonuclears, 19 per cent small lymphocytes, 2 per cent large lymphocytes, 2 per cent immature cells and 1 per cent eosinophils. On April 28 there were 32,050 leukocytes, and a differential count showed 80 per cent polymorphonuclears, 15 per cent small lymphocytes, 2.5 per cent large lymphocytes and 2.5 per cent eosinophils. On May 27 there were 20,100 leukocytes, and the differential count was 73 per cent polymorphonuclears, 19 per cent small lymphocytes, 1.5 per cent large lymphocytes and 6.5 per cent eosinophils. On June 4 there were 19,800 leukocytes, of which 76 per cent were polymorphonuclears, 22 per cent small lymphocytes, 1 per cent large lymphocytes and 1 per cent eosinophils.

Urinalysis and the Wassermann test gave negative results.

Between May 10 and June 1 the patient has had a total of $\frac{3}{8}$ skin unit of roentgen rays from the waist up, and $\frac{1}{4}$ skin unit to the areas below the waist. He has used olive oil locally.

Recently he has begun to feel weak and listless.

Coccidioidal Granuloma Presented by DR H E MILLER, San Francisco (from the Division of Dermatology of the University of California Medical School)

A J R, an Italian man aged 40, presents an unusual picture of coccidioidal granuloma characterized by brawny induration and erythema of the nose, upper lip and cheeks. He was presented before the San Francisco Dermatological Society on Dec 4, 1936 (*ARCH DERMAT & SYPH* **36** 1240 [Dec] 1937) and again at the joint meeting of the Los Angeles and San Francisco societies on Feb 12, 1938 (*ibid* **38** 499 [Sept] 1938)

There has been no notable change since then (fig 2)



Fig 2 (A J R)—Coccidioidal granuloma, showing edema of the nose and midportion of the face, with granulomatous lesions in the nostril

Coccidioidal Granuloma Presented by DR H E MILLER, San Francisco (from the Division of Dermatology of the University of California Medical School)

H S H, a white ranch worker aged 43, was first seen on Dec 28, 1937. One month before entry he contracted a "cold" with rhinitis, sore throat, cough and expectoration. About this time he noticed a swelling on his lower lip.

Examination showed a granulomatous mass involving most of the lower lip, most evident on the right side. Numerous superficial small abscesses exuded pus and serum. The lip was not particularly painful. The lymph nodes in the right submaxillary region, the axillas and the epitrochlear and inguinal regions were enlarged. The physical examination showed no essential abnormality except a blood pressure of 184 systolic and 110 diastolic.

A blood count showed a hemoglobin concentration of 106 per cent. There were 5,220,000 erythrocytes and 8,800 leukocytes. A differential count showed 70 per cent polymorphonuclear neutrophils, 26 per cent lymphocytes, 3 per cent monocytes and 1 per cent eosinophils.

A smear of pus in 15 per cent sodium hydroxide revealed two round double-contoured bodies suggestive of *Coccidioides immitis*.

Microscopic examination of sections showed chronic granuloma. No coccidioides organisms were seen.

A cutaneous test with coccidioidin gave negative results.

Roentgenograms of the chest showed only an increase in the hilar shadows.

Kolmer and Kahn tests were negative.

Cultures of material from the lip showed a fluffy white mold with septate mycelium.

Inoculation of a guinea pig showed *Coccidioides immitis*.

Roentgen therapy was begun on Jan 5, 1938. A total of 500 roentgens unfiltered, divided into five weekly doses, produced great improvement of the local lesion (fig 3).



Fig 3 (H S H) —Coccidioidal granuloma, showing solitary ulcerated nodule

DISCUSSION

DR CHARLES C TOMLINSON, Omaha. I have observed but 3 cases of coccidioidal granuloma, 2 of which Dr Paul Bancroft and I have reported as instances of cure following the intravenous use of antimony and potassium tartrate and roentgen irradiation to the lesions (*J A M A* 91 947 [Sept 29] 1928). Both of the patients have remained well. This experience makes me wonder why our results were so good or why others have not had similar experience.

DR W H GUY, Pittsburgh. My entire series consists of 1 case. It is the first case in which antimony and potassium tartrate and roentgen rays were used. The patient was a man with an extensive involvement. He is well today.

DR RICHARD S WEISS, St Louis. I have observed only 1 case of coccidioidal infection in St Louis. The patient had no cutaneous and no pulmonary lesions, but he did have arthritis, and the organism was cultured in material from the affected joints. He acquired his disease in California, and he died in St Louis.

DR KENDAL FROST, Los Angeles. Recently when I was in Bakersfield, which is about the center of the area in which the disease is prevalent, I saw several patients with coccidioidal granuloma in the office of one of the local physicians. He said that almost every practitioner in the community had a number of cases on his regular list. So it is a common disease in that location.

DR HARRY E ALDERSON, San Francisco A patient in the Stanford University Hospitals now has typical coccidioidal pulmonary lesions, from which organisms have been recovered She had erythema nodosum, often seen with this condition She had never been in or near the San Joaquin valley, but just before her infection started she had helped to clean the outside and the inside of a dirty trailer that had been traveling through that section

DR FRED D WEIDMAN, Philadelphia May I ask whether the particular dermatologic expression of patient A J R is unique for coccidioidal granuloma? The lesions I saw on my last visit to the Pacific coast looked more like scrofuloderma Those illustrated in the literature are granulomatous, making one think of tuberculosis verrucosa cutis This lesion looks more like leukaemia cutis

DR WILLIAM H GOECKERMAN, Los Angeles Apropos of Dr Weidman's remarks, I am often struck by the versatility of this organism in producing clinical pictures

DR H E MILLER, San Francisco These patients, especially A J R, present unusual clinical pictures for coccidioidal granuloma I presented them simply for that reason

It is always of interest to hear reports of 1 or 2 cures of coccidioidal granuloma with different drugs When one tries to repeat the therapeutic procedure in another case one generally is not successful Over fifty drugs have been used in the treatment of coccidioidal granuloma, and with some fifteen of them cures have been reported In evaluating treatment it must be realized that probably in a large number of cases the disease clears spontaneously

Blastomycosis Presented by DR E A LEVIN, San Francisco (from the Division of Dermatology of the University of California Medical School)

J R, a white man aged 40, presents severe generalized blastomycosis Symptoms first pointed to involvement of the urinary and the respiratory tract Progressive loss of weight, pains in the joints, abdominal distress and most recently granulomatous subcutaneous abscesses followed He was presented at the joint meeting of the Los Angeles and San Francisco dermatologic societies by Dr F G Novy Jr on Feb 12, 1938 (ARCH DERMAT & SYPH **38** 500 [Sept] 1938)

He was subsequently treated with roentgen rays An area on the dorsum of the right hand received the largest total amount This was 1,250 roentgens and was given in fractional doses of 75 r once a week, filtered with 0.25 mm of copper and 1 mm of aluminum

From January 4 to March 21 he was given 50 per cent thymol in oil orally three times a day, the dose beginning with 5 and increasing to 12 drops During this time a new lesion about 1.5 cm in diameter developed on the dorsum of the right forearm

On March 21 he was given $\frac{1}{4}$ teaspoonful (about 1 cc) of a saturated solution of sodium iodide three times a day The dose was rapidly increased to 1 teaspoonful (about 4 cc) three times a day This was continued until April 18, when the patient complained of severe pain in the right shoulder and epigastric distress Physical examination revealed no cause for this pain The cutaneous lesions continued to progress

On May 17 sulfamidamide medication was begun but was discontinued after two days because of severe nausea and vomiting

Potassium iodide therapy was begun on May 24 There has been some improvement in the lesion on the right hand in the last week

DISCUSSION

DR OLIVER S ORMSBY, Chicago Seeing typical blastomycosis in California is of historical interest to me Many years ago, when my associates and I were studying this disease in Chicago, Dr Morrow and others were studying granuloma coccidioidale in California It appeared for some time that the latter disease was restricted to California and that blastomycosis did not occur here Time has shown that blastomycosis has a wide distribution throughout the United States, with an

occasional case on the western coast, but coccidioidal granuloma is still largely a California disease with an occasional case elsewhere. It was thought early that blastomycosis was a purely cutaneous disease, but in 1903 with Dr H M Miller I presented a case of generalized involvement (*J Cutan Dis* 21 121, 1903), and numerous others followed. On the other hand, the coccidioidal disease was early recognized as frequently systemic, the cutaneous involvement often being of minor importance. In the major portion of cases of blastomycosis the clinical picture is uniform and characteristic, and a positive diagnosis can usually be made. In the coccidioidal disease the cutaneous lesions are multiform, sometimes resembling other conditions, and the diagnosis often has to be made on the basis of the microscopic picture. It may be concluded that as a rule blastomycosis is predominantly a cutaneous disease with occasional systemic invasion, and coccidioidal disease is more often systemic with comparatively minor cutaneous involvement.

Dermatomyositis Presented by DR H J TEMPLETON, Oakland, Calif

J A, a Dane aged 54, is presented because of a pruritic erythematous scaly eruption associated with pains and stiffness in his muscles and joints. He was presented before the San Francisco Dermatological Society on April 22, 1938 (*ARCH DERMAT & SYPH* 38 1001 [Dec] 1938).

Subsequently a further medical study was made by Dr Fletcher B Taylor, Oakland, Calif. Mild chronic tonsillitis was noted. Dental roentgenograms, an electrocardiogram and a determination of the basal metabolic rate showed no abnormality. Roentgenograms of the right hand showed some osteoporosis of the phalanges.

Treatment has consisted of the administration of 1 gram (0.06 Gm) of thyroid daily, of yeast by mouth and of soothing topical applications.

At present he shows only slight erythema and puffiness of the face and residual slightly scaly dermatitis of the radial aspect of the forearms, elbows, palms and dorsa of the hands. Marked pigmentation, largely from sun bathing, is present. Tenderness and deep induration of the hands and wrists still can be noted. He cannot fully extend his fingers. There is no evidence of scleroderma.

DISCUSSION

DR PAUL A O'LEARY, Rochester, Minn. This patient presented a moderately advanced stage of dermatomyositis and demonstrated clearly the atrophy of the shoulder girdle group of muscles, which is a prominent feature of this disease. I have recently seen this disease in a number of children as well as adults and have used a great variety of therapeutic measures with different degrees of success. I have been impressed with the frequency with which it may undergo spontaneous arrest. The atrophy and disability remain, while the progressive muscular involvement ceases. On the other hand, chiefly in children, this disease is frequently fatal. At the moment my associates and I are treating these patients with oxygen, typhoid vaccine and aminoacetic acid. Vaccine therapy and the various nonspecific measures have definite merit, but the intensive use of oxygen, either in an oxygen tent or by mask, results in considerable symptomatic relief.

DR W H GUY, Pittsburgh. I have under observation at the present time a case of unusually severe dermatomyositis. There are an intermittent septic type of temperature curve, attacks of dyspnea and tachycardia, progressive muscular atrophy and loss of weight. Badly infected teeth were found. These were removed, and a green streptococcus was cultured. During acute febrile attacks it has been possible to recover a green streptococcus from the blood stream but not during the interims between attacks. These findings may be of significance. As Dr O'Leary has indicated, it would seem that recovery when it has occurred has been spontaneous. Aminoacetic acid has been suggested therapeutically, and I have been feeding the patient large amounts of gelatin with that in mind. It might be interesting in Dr Templeton's case to examine sections of muscle microscopically for perivascular infiltration. In more advanced sections muscular degeneration becomes evident microscopically. With the amount of degeneration of muscle fiber that has occurred, a relatively high creatinine concentration in the urine would likely be found.

A Case for Diagnosis (Panniculitis?) Presented by DR HARRY E ALDERSON, San Francisco (from the Stanford University School of Medicine, Department of Dermatology and Syphilology)

L P, an Italian woman aged 38, is presented for consideration of numerous well circumscribed firm, slightly pigmented and irregularly nodular masses adherent to the skin and involving the subcutaneous tissue. These have been developing during the past eight months on the posterior aspect of the right arm, both thighs and the buttocks.

She was presented at the joint meeting of the Los Angeles and San Francisco dermatologic societies on Feb 12, 1938 (*ARCH DERMAT & SYPH* 38:493 [Sept] 1938).

Microscopic study reported by Dr A E Ingels showed dense bands of fibrous tissue throughout the subcutaneous tissue, with areas of lymphocytic infiltration and multinucleated giant cells of the foreign body type. Numerous areas showed disappearance of subcutaneous fat, leaving lacunas. Stains for fat showed little or none in these areas. There was no tuberculous or sarcoid structure, there were no foam cells and no xanthoma cells. Stains for acid-fast bacilli failed to disclose tubercle bacilli, and no other organisms were demonstrable. The microscopic diagnosis was chronic panniculitis.

DISCUSSION

DR RICHARD S WEISS, St Louis. In my opinion this patient presents typical camphor liniment tumors of the type so well described some years ago by W H Mook and W G Wander (*J A M A* 73:1340 [Nov 1] 1919). The lesions which they described were nodules and definitely extended along lymph channels. The sections presented today did not show the typical granulomatous reactions that are associated with foreign body tumors, although in some areas there were traces of this. The patient told a clear story of a serious operation in 1923. She was disabled for a long time, and in her own words she "had got a great many needles stuck into her arms and thighs." I have been told that the physician who operated on the patient stated that no camphor liniment had been injected. However, it is possible that his recollection is faulty, as the operation was done many years ago.

DR CLARK W FINNERUD, Chicago. I agree with what Dr Weiss has said, aside from the fact that in the sections that I looked at there was a fine foreign body reaction, a chronic granuloma with plenty of giant cells involved. I think that the lesion is a foreign body tumor, the result of injections of camphor liniment.

DR OLIVER S ORMSBY, Chicago. Clinically, it is a classic tumor due to camphor liniment or liquid petrolatum. At about the time she was operated on the former drug was on the market for use by injection. After producing trouble for a number of years, it was withdrawn.

DR HARRY E ALDERSON, San Francisco. Even if the condition were due to injections of camphor liniment or another substance, it is still panniculitis. Answering the comments about camphor liniment, I should say that it would be extremely unusual for injections to be given near the popliteal region and in the other places where these lesions appear.

DR C GUY LANE, Boston. At the Massachusetts General Hospital there have been 3 cases of possible Weber-Christian type of panniculitis, in 2 of which the diagnosis has been proved conclusively. The patients were in their teens. Indurated areas with some slight tenderness developed spontaneously on the legs and gradually involuted. They left round superficial crater-like depressions, which gradually became soft and smooth. No indurated areas like those seen here remained.

DR RICHARD S WEISS, St Louis. Dr Alderson stated that injections of camphor liniment would not be given near the popliteal spaces. I agree with that. However, characteristically tumors caused by liquid petrolatum can and often do arise at a distance from the point of injection. The oil seems to travel down the lymphatic spaces, and in the course of months or years the tumors appear at distances of 3 to 18 inches (8 to 46 cm) away from the original site of injection.

CLEVELAND DERMATOLOGICAL SOCIETY

JOHN A GAMMEL, M D, *President*

Oct 27, 1938

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J R DRIVER, M D, *Reporter*

Lupus Vulgaris Presented by DR H N COLE and DR J R DRIVER

C M C, a Negress aged 43, states that between the ages of 3 and 15 she had suppurating cervical glands which were incised on numerous occasions. Following this an eruption developed on the left side of the face and ear, which has slowly progressed. During the succeeding period, of more than twenty-five years, she has received no treatment of any kind, and her general health has been good.

On the left side of the face and the left ear there is a dull red granulomatous lesion consisting of a serpiginous eruption larger than a palm with nodular borders and a scarring center. Under diascopic pressure apple jelly tubercles can be demonstrated. There was no evidence of pulmonary tuberculosis on physical examination.

Serologic tests for syphilis were negative.

Histologic examination of tissue from the edge of a nodule showed the epithelium to be thin, with some parakeratosis. The normal arrangement of the rete pegs was disturbed by an infiltrate which extended from the corium up to the basement membrane. This infiltrate consisted largely of round cells, mononuclears and epithelioid cells. There were poorly formed giant cells and areas of necrosis. Occasional areas showed a few plasma cells and eosinophils.

DISCUSSION

DR HAI EISON FREEMAN: I should like to ask how frequently lupus vulgaris is seen in Negroes.

DR C L CUMMER: The impression I have is that it is fairly frequent, while lupus erythematosus is rather infrequent.

DR JOHN A GAMMEL: Lupus vulgaris is much more frequent in Europe than in this country, and I think more frequent in white persons than in Negroes. Comparatively few white persons acquire lupus vulgaris in the United States. On close questioning one usually finds a patient to be an immigrant.

DR J R DRIVER: The interesting thing about this particular patient is that she has had tuberculosis of the cervical glands practically since infancy and had numerous incisions in childhood for these nodes. This process has been going on since she was a small child. It is no doubt secondary to tuberculous adenitis. It is remarkable that no treatment has been given in the more than twenty-five years that she has had lupus vulgaris.

Congenital Syphilis with Nerve Deafness after Therapeutic Malaria and Chemotherapy Presented by DR H H JOHNSON (from the Department of Dermatology and Syphilology, Lakeside Hospital)

E Z, a woman aged 29, first came under observation in July 1931. She complained of blurring of vision and pain in the right eye for three weeks. Examination at that time revealed characteristic syphilitic interstitial keratitis of the right eye, prominent frontal bosses and rhagades about the mouth. The Wassermann and the Kline reaction were strongly positive. The spinal fluid was normal. The patient had seven malarial paroxysms. There was marked improvement of the keratitis. From August 1931 to March 1934 she received thirty-three injections of neoarsphenamine and forty-five injections of bismuth subsalicylate in alternating

courses The Wassermann reaction of the blood remained strongly positive throughout therapy The patient then lapsed from treatment

She returned on Sept 27, 1938, complaining of tinnitus in the left ear for six months and deafness for two months

The left cornea shows a slight opacity, and there is a decided opacity of the right cornea, with no evidence of activity The pupils react normally to light and in accommodation The tympanic membranes are slightly retracted Weber's test was negative Rinne's test showed air conduction greater than bone conduction bilaterally With the tuning forks the high tones were absent bilaterally The spoken voice is heard with difficulty The upper central incisors are spaced and notched

The patient has been placed on biweekly injections of 2 cc of iodobismutol with saligenin

Erythroderma of the Hands and Wrists in a Syphilitic Patient Presented by DR FRANK McDONALD (from the Department of Dermatology and Syphilology, Lakeside Hospital)

M K., a woman aged 58, states that after an appendectomy nineteen and one-half years ago diffuse redness of her hands and wrists developed and has continued ever since There are no subjective complaints except from a cosmetic point of view She gave no history of syphilitic infection and had received no treatment for the disease until the past three weeks, during which she has received five intramuscular injections of iodobismutol with saligenin The Wassermann and the Kline test were strongly positive on two occasions just prior to the institution of this therapy The spinal fluid was normal

Symmetrically on both hands and wrists there is an atrophic and slightly scaling reddish violet eruption, not raised above the surface of the skin In the central portions of the palms there are scaling and considerable atrophy On the right calf there is a similar lesion, fairly circinate and about 5 cm in diameter

General physical examination showed arteriosclerotic changes in the fundi of the eyes and moderately uniform cardiac enlargement with distant heart sounds There was moderate dyspnea on exertion The blood pressure was 140 systolic and 100 diastolic Urinalysis revealed a trace of albumin Roentgenograms of the chest showed normal pulmonary fields

A section from the periphery of the lesion on the right wrist revealed an intact layer of stratified squamous epithelium with slight atrophy of the epidermis The granular layer was prominent, and the rete pegs in the cutis were inconspicuous In the corium there was an increase in the amount of connective tissue, and a moderate number of fibroblasts were seen There were focal collections of small round cells, mostly lymphocytes This infiltrate was practically all in the papillary layer Some round cells had migrated into the epidermis Special stains failed to reveal the presence of spirochetes

DISCUSSION

DR H G MISKJIAN If it is proposed by the presenter that this case is one of syphilitic erythroderma, he must know of other cases that have been described Erythroderma in late syphilis is known to exist It comes especially on the thighs and hips It has nothing to do, however, with this type of lesion Consequently, I cannot agree with the diagnosis as presented I have nothing definite to offer except a suggestion based on the erythema and atrophy Because of the symmetry, atrophy and redness, I am inclined to think this condition may be idiopathic atrophy of the skin The patch on the right calf speaks in favor of that diagnosis also

DR J R DRIVER If this is syphilis, it is different from any syphilitic lesion I have ever seen The improvement apparent from comparing the photograph and the lesion as it is today is definite, and the patient has received antisyphilitic therapy for about three weeks That would perhaps favor a diagnosis of syphilis

I have never seen areas of atrophic lichen planus as large as these, but there is something about the appearance of the atrophy—the dry, scaly parchment-like character of the atrophic area—that suggests atrophic lichen planus. The pathologic picture with an infiltrate in the subpapillary layer also suggested lichen planus. A certain amount of heavy metal treatment might have caused the improvement that seems to have occurred. I favor a diagnosis of atrophic lichen planus, for the present at least.

DR JOHN A. GAMMEL: I saw the patient when she first presented herself at the clinic, and I am not sure that there is such striking improvement.

DR H. J. PARKHURST, Toledo, Ohio: I am inclined to agree with Dr. Miskjian.

DR J. EDGAR FISHER: I think the whole process has been caused by some vascular changes due to syphilis.

DR FRANK McDONALD: Review of this slide left no doubt that the picture did not fit into what is usually expected in late syphilitic lesions. The points of interest seemed to be the atrophy, the fact that almost all the cellular infiltration was in the subpapillary layer and the fact that the granular layer appeared to be definitely prominent. In addition there were less fibroblasts than would be expected in a syphilitic process and a lack of perivascularitis. I only suggested the possible syphilitic origin of the disease because the patient is syphilitic and the condition has definitely improved on heavy metal therapy. According to the patient, never since the onset have the lesions been as pale as they now are.

DR E. W. NETHERTON: Were there any neurologic abnormalities?

DR FRANK McDONALD: None.

Idiopathic Lymphedema of the Upper Lip Presented by DR. FRANK McDONALD (from the Department of Dermatology and Syphilology, Lakeside Hospital)

E. D., a well nourished girl aged 15, states that four years ago she had a furuncle on the upper lip, at the orifice of the left nostril. Since then there have been many exacerbations and remissions of the swelling, but at no time has the lip returned to its original size. The swelling has been present without remission for nearly a year. On the left side it is more prominent. There is little or no demonstrable pitting on pressure. There is a moderate degree of puffiness of the lower eyelids.

Routine examinations of the blood and urine gave negative results. Tuberculin tests were negative, and a roentgenogram of the chest was normal. The basal metabolic rate was -18 per cent.

The following treatment produced no benefit: epinephrine administered on two occasions, daily doses of 2 grains (0.13 Gm.) of thyroid, four doses of 100 roentgens each of roentgen rays and short wave diathermy.

DISCUSSION

DR EMERSON GILLESPIE, Canton, Ohio: The history would suggest a streptococcal infection as the cause of the trouble. The hardness of the tissues sometimes seen is not present.

A Case for Diagnosis (Dermatitis Herpetiformis or Vesicular Lichen Planus?) Presented by DR. W. F. SCHWARTZ (from the Department of Dermatology and Syphilology, City Hospital)

D. L., a white girl aged $7\frac{1}{2}$ years, has an eruption consisting of poorly margined patches of lichenified dermatitis with excoriated, vesicular borders, which developed about one year ago. The areas average from 8 to 12 cm. in diameter and are located on the upper and outer portions of the buttocks and the sacrum. The process has persisted, and is associated with marked pruritus. Considerable pigmentation surrounds the lesions.

Histologic examination showed an irregular surface, mild hyperkeratosis and hypergranulosis. The epidermis was of approximately normal thickness in most places, but showed slight acanthosis. Scattered lymphocytes and large mononuclear cells were present about blood vessels and the glands of both the superficial and the deep portion of the corium.

DISCUSSION

DR H G MISKJIAN The lesions are red and the size of half a dollar or larger and show evidence of a vesicular reaction. The process is a definite dermatitis of infectious origin. The fact that it has been of long duration is not entirely against a diagnosis of a streptococcal infection, for such a process may persist a long time. Against a diagnosis of contact dermatitis is the presence of circinate lesions.

DR H J PARKHURST, Toledo, Ohio I do not see anything to suggest any form of lichen planus with which I am familiar. I think that the localization of the eruption is against dermatitis herpetiformis. In a patient who is a bed wetter it might be due to contact with decomposition products of the urine. Or the process may be toilet seat dermatitis. I have seen similar lesions in children following repeated contact with toilet seats to which saponated solution of cresol had been applied.

DR E W NETHERTON I agree with Dr Parkhurst. The possibility of toilet seat dermatitis is strong.

DR C L CUMMER In the cases I described of toilet seat dermatitis due to dye or stain (ARCH DERMAT & SYPH 27:976 [June] 1933) there was an area showing exactly where the patient had sat, which I do not think can be seen in this case. There is almost a saddle mark on the body over the region of the sacrum. I do not see why this cannot be explained as a chronic infectious eczematoid dermatitis.

DR GEORGE HASKEL CURTIS (by invitation) I questioned the little girl and her mother rather closely about this eruption. It has been rather constant for about a year. There has never been a period in which it improved or got worse. The toilet seat in their home is of white enamel, and it would be extremely rare for white enamel to cause a dermatitis. The patient, on the other hand, played considerably in the playgrounds, and both she and her mother think the condition may have been worse after school started. They say the toilets are painted brown in school. I suggest that an investigation be made and some of the scrapings from the school toilets used in patch tests.

DR E J ARDAY, Lakewood, Ohio (by invitation) I found recently a new cause for toilet seat dermatitis in a baby who is using a toilet seat covered with a rubberized sheet. I performed a patch test with the substance, and the result was positive.

DR W F SCHWARTZ My associates and I were satisfied in our own minds that this eruption was not a contact dermatitis. The areas of intervening normal skin argue against such a diagnosis. We have been somewhat in doubt, and I presented the case with a questionable diagnosis to stimulate discussion.

Three Cases of Insect Bites. Presented by DR W F SCHWARTZ (from the Department of Dermatology and Syphilology, City Hospital)

A mother and 2 children present erythematopapular lesions on the lower extremities of four weeks' duration. Many of the lesions are equidistant from each other and are arranged in straight lines, circles and various geometric figures. Some show a suggestive central punctum. The family moved into their present house about eight weeks ago.

DISCUSSION

DR C L BASKIN, Akron, Ohio I do not think these cases need much discussion. The lesions are bites from cat fleas. Dog fleas seldom bite. If the

patients put on white stockings and sit around in the dark and the physician turns on the lights quickly, he will find the fleas. As a species of fleas they are tiny. The mother states that she has seen little black bugs that fly, but the difference between flying and hopping depends on the patient's mentality. This test is simple and invariably results in clearing up what may otherwise present a problem in diagnosis.

DR H. A. HAYNES: I have had an experience recently with cat fleas. I had a cat, which I have got rid of, but the fleas got in the carpets and it was finally necessary to have the entire house fumigated in order to get rid of the pests.

DR J. R. DRIVER: Insect bites often present a problem in diagnosis. In the cases presented today the grouping of the lesions was characteristic. Dr Baskin's suggested method for the detection of fleas is probably not generally known by dermatologists.

NOTE—After following the suggestion of Dr Baskin the presenter reported that the offending insects were easily demonstrated and were identified as cat fleas.

Partially Differentiated Adenocarcinoma of the Stomach with Multiple Less Well Differentiated Metastases to the Skin Presented by
DR W. F. SCHWARTZ (from the Department of Dermatology and Syphilology, City Hospital)

A. S., a moderately emaciated pale man aged 64, was apparently well until two years ago, at which time he began to complain of vague epigastric distress. This has become gradually worse, and there have been associated anorexia and loss of 20 pounds (9.1 Kg). He began to notice a few "lumps" under the skin approximately twelve months ago. In the past several weeks these subcutaneous nodules have rapidly increased in number, but the earlier ones have changed little in size. Two and one-half weeks ago an exploratory laparotomy was done and a specimen taken from an 8 cm mass in the wall of the stomach near the pylorus and another from a mesenteric lymph node. Histologically the tumor was a partially differentiated adenocarcinoma.

Over the upper half of the trunk and on the neck are several hundred shotty subcutaneous nodules, measuring up to 8 mm in diameter. They are discrete, firm and freely movable, without noticeable involvement of the overlying epidermis. There is no lymphadenopathy.

Roentgen examination of the chest showed the lungs to be free of metastatic lesions. Roentgenograms of the stomach showed a large filling defect at the lower half of the greater curvature.

Histologic examination of a subcutaneous nodule showed the epidermis to be thin, irregular and without other significant changes. Situated deep in the corium and subcutaneous tissue there were irregular, poorly circumscribed collections of abnormal cells. These cells varied greatly in size, shape and character. Generally they were spindle shaped, with deep-staining vesicular compact oval or irregularly shaped nuclei and moderately abundant fibrillary or finely granular cytoplasm. The cells failed to form any histologic pattern, but as seen in azocarmine preparations, formed a fine network of new collagen. Stains for fat showed no lipid in the tumor cells. About the tumor cells there were a few inflammatory cells, chiefly lymphocytes and large mononuclear leukocytes.

DISCUSSION

DR W. F. SCHWARTZ: Before the exploratory laparotomy was performed and the character of the primary tumor determined, there was considerable speculation concerning the diagnosis of the widespread cutaneous and subcutaneous nodules. Clinically my associates and I considered metastatic carcinoma, leukaemia cutis and sarcoid. It is unusual for a generalized carcinomatosis such as this to have lesions lasting now for a year or more. Life expectancy in such cases is generally a matter of a few days or a few weeks at most. It is well known that carcinoma

of the gastrointestinal tract results in extensive cutaneous metastases more frequently than carcinoma seen in any other location

Sarcoid-Like Tuberculosis Cutis Accompanied with Unusual Osteosclerotic Changes Presented by DR H H JOHNSON (from the Department of Dermatology and Syphilology, Lakeside Hospital)

R W, a well developed and well nourished Negro aged 30, in April 1925 underwent pericardiotomy for acute fibrinous pericarditis. Endocarditis with aortic insufficiency developed at that time. In 1929 he noticed red nummular lesions on the shaft of the penis, and three weeks later similar lesions appeared at the base of the penis, extending circularly around the shaft in seven weeks. One month later he noticed a number of nodules on the scrotum and adjacent aspect of the left thigh and one on the back of the neck. Since January 1931 the patient has had pain in the spine, sacrum and iliac bones. All the lesions became depigmented and have remained unchanged to date.

At the present time, encircling the shaft of the penis are two irregular, sharply margined, slightly elevated pale red plaques, with dry, scaling surfaces. These areas are slightly thickened and firm, with some loss of elasticity. They are not adherent to the underlying structures. On the scrotum are about twenty-five nodules of similar color and consistency. On the inner aspect of the right thigh and on the back of the neck are irregular-shaped nodular areas of the same type.

The heart was enlarged, with physical evidence of aortic insufficiency. There were marked limitation of movement of the spine and tenderness on palpation over the dorsal vertebrae and over both sacroiliac joints. Urinalysis and blood counts showed no abnormality. Serologic tests for syphilis were negative. The tuberculin test with a dilution of 1:10,000 was negative, while with a dilution of 1:1,000 it was positive. The serum calcium content was 10.2 mg per hundred cubic centimeters, the serum phosphorus 5.3 mg and the serum phosphate 21 units.

Roentgenograms of the bones in 1931 revealed localized sharply defined rounded confluent areas of increased density in the ilia, sacrum and lumbar portion of the spine. Repeated subsequent roentgenograms have shown slow progression and extension of the osteosclerotic process to involve the scapulas and the lower ribs. Roentgenograms of the lungs were repeatedly normal.

A histologic examination of the ilium showed unusually compact spongy bone. The marrow was fibrous, in many fields there were granulomatous lesions with central giant cell formation of peripheral epithelioid cells and dense mononuclear infiltration. A diagnosis of tuberculous osteomyelitis was made.

Histologic examination of a lesion on the penis showed considerable depigmentation of the basal layer of the epithelium, beneath which was granulomatous infiltration in the upper part of the corium. There were numerous typical tubercles with central caseations, epithelioid cells, Langhans giant cells and lymphocytic infiltration.

DISCUSSION

DR E W NETHERTON Several years ago I presented this patient at a meeting of this society with a diagnosis of sarcoid. There was general agreement on the diagnosis at that time. The histologic picture was that of sarcoid, and there was no typical tuberculosis as described today. Also there was an anergy to tuberculin at that time. The bony changes have increased in intensity. The lesions are definitely atrophied, and there is some evidence of more scarring. I now feel that this case is one of a type described in the recent literature as sarcoid-like tuberculosis of the skin.

DR JOHN E RAUSCHKOLB This case resembles in many particulars a case that was carefully studied at the City Hospital a few years ago. Dr Fred Weidman saw the patient and stated that he believed the condition the same as that described by him as sarcoid-like tuberculosis of the skin. The histologic structure of a lesion of the skin was the same as that shown today. Pulmonary tuberculosis subsequently developed, and I believe the patient is at present in the tuberculosis division of the City Hospital.

Six months ago he first noticed roughness of the fingers, which gradually extended up the forearms to his elbows. There have never been any subjective symptoms.

On the dorsa of the fingers at the first and second phalanges is a grater-like roughness, produced by the presence of dry scaly conelike papules, through the blackish center of each of which a hair emerges. Similar areas are evident on the dorsa of both hands, around the wrists and extending up both forearms on the volar surface to the elbows. Here the affected areas show a definitely rounded contour, merging in places. The eruption is symmetric.

There are numerous discrete flesh-colored small follicular papules on the sides of the neck, symmetrically situated and extending upward from both supraclavicular fossae.

Hyperkeratosis of both palms is pronounced, but the soles are unaffected.

The basal metabolic rate was -14 per cent. A roentgenogram of the chest revealed accentuation of the upper bronchial radicles extending into the upper lobes of both lungs indicative of bronchial productive inflammation.

DISCUSSION

DR L. J. FRANK. I think that the hair follicles are simply plugged with grease. The condition happens to be more noticeable on the backs of the fingers, but the follicles in this location are normally more numerous and larger. I do not agree with the diagnosis of *pityriasis rubra pilaris*, as there are no seborrheic lesions of the face with scaling, but there is some scaling around the hair follicles on the backs of the fingers and on other parts of the body. In early *pityriasis rubra pilaris* there should be some scaling on the palms. This patient does not show any erythema. Consequently, I feel that he has *keratosis pilaris*, and the etiologic factor is some wax or grease which he handles.

DR L. FRUCHTBAUM. Personally, I do not see the characteristics of *pityriasis rubra pilaris*. In the first place, there are no lesions on the palms, except those resulting from wax, which are occupational. There are none of the changes in the nails usually found in *pityriasis rubra pilaris*. There are no patches on the body except a few lesions on the forearms. There is no change on the face and head. The color of the lesions is not that of *pityriasis rubra pilaris*. The only evidence is the presence of some black dots in the original lesions and the distribution on the proximal and middle fingers. However, on these grounds alone I should not make a diagnosis of *pityriasis rubra pilaris*.

DR M. EDWARD GOEBEL. While it is true that all the features of *pityriasis rubra pilaris*, such as seborrhea, are not present, the coalescing of the papules forming grayish red scaly patches makes me think of early *pityriasis rubra pilaris*. This is suggested by the hard dry papules at the mouths of the hair follicles. The condition has to have an onset sometime. It is possible that the patient is in the first stage of *pityriasis rubra pilaris*.

DR DAVID M. DAVIDSON. I am inclined to consider this case as one of early *pityriasis rubra pilaris*. I do not agree that the disease is *keratosis pilaris*.

DR JACOB SKEER. I am inclined to agree with the presenter that it is *pityriasis rubra pilaris*.

DR SEYMOUR H. SILVERS. I think that in this case there are some interesting problems, both of a theoretic and of a practical nature. *Pityriasis rubra pilaris* is rare, and one observes only a few cases annually, even at the large centers. It is difficult to make a positive diagnosis of this disease if the lesions are limited in extent. This patient shows lesions only on the dorsa of the hands and forearms. In these areas there are pinhead-sized slightly red keratotic follicular papules. The patient gives a history of having worked with wax and oil, substances which are known to produce follicular eruptions in workers. I should therefore suggest that he stop work for two or three weeks. If these lesions are due to his occupation, they should clear or be greatly improved. If they are those of *pityriasis rubra pilaris*, there will be no change.

DR C THOMAS CHIARAMONTE This boy was sent to me by his employer for treatment as a subject for compensation I fail to see anything compensable in this dermatosis, and I am finding it difficult to convince the employer that the eruption was not caused by wax The patient did the same kind of work for two and a half years before the onset of the eruption He always wears long sleeves at work The lesions have been asymptomatic from the beginning There has never been any vesiculation or moisture The patches on the forearms have a well defined circinate outline I believe that these facts tend to eliminate the possibility that the disease is occupational

R Prosser White (The Dermatogoses or Occupational Affections of the Skin, New York, Paul B Hoeber, Inc, 1929) mentioned the fact that there has never been recorded a single instance of occupational dermatosis arising from the handling of wax in the candle industry

I believe that the noteworthy and atypical feature of this case as it is presented this evening is the complete absence on the face and scalp of any seborrhoea sicca-like lesions

Multiple Idiopathic Hemorrhagic Sarcoma of Kaposi Presented by DR DAVID M DAVIDSON

C N, a Jew aged 60, born in Russia, is presented from the Trinity Hospital The patient has had the dermatosis on the upper and lower extremities for about one year A detailed history was not obtainable

On the dorsa of both hands and the proximal phalanx of the right ring finger and of the left index finger are small margined slightly elevated erythematoviolaceous infiltrated plaques Most of the color disappears on pressure On the entire dorsum of each foot and toes, in the region of the left external malleolus and on the anterior aspect of the left ankle are similar infiltrated plaques The right ankle is enlarged in circumference, owing to a pitting edema, and is surrounded by an erythematoviolaceous patch On the anterolateral aspect of the lower part of the right leg there is an irregular firm elevated and sharply margined lavender plaque The color does not disappear on pressure A similar firm lavender plaque is found on the posterointernal aspect of the same leg, with a pea-sized depressed scar of the same color A flat irregular purpura-like patch is present below the left elbow Erythematous patches of an eczematous eruption are noted among the lesions just described, chiefly on the hands, ankles and lower part of the right leg

Microscopic examination of tissue from the dorsum of the left hand and the right leg showed Kaposi's sarcoma in the inflammatory stage

DISCUSSION

DR DAVID L SATENSTEIN The only thing I should like to call attention to is a feature which developed since the presentation at the last meeting Some of the members noticed the erythema around the man's elbow, all that has developed during the past week In other words, here is an early stage of Kaposi's sarcoma which is probably progressive and taking on the inflammatory type It is possible that if he survives long enough the other changes will develop

DR L FRUCHTBAUM I should like to ask Dr Satenstein whether the taking of tissue could account for the flare-up of the process Some years ago I had a case of classic disseminated Kaposi's sarcoma on the body, and after I performed a biopsy many new lesions appeared

DR DAVID L SATENSTEIN The piece of tissue was taken from the right leg, and as the flare-up was on the left elbow, I do not think there could be any connection If the disease were in the tumor stage it would be possible that the tumor was irritated, causing the pathologic process to become more active I have 40 to 50 specimens of Kaposi's sarcoma and I do not remember a single instance in which removal of a biopsy specimen had anything to do with the spreading of the disease One patient came to me with a tumor mass as big as

my fist on his sole. I removed it by electrodesiccation and the base healed nicely. There has been no dissemination. Taking tissue from a malignant process does it no harm, provided the tissue is not traumatized. With the modern method of removing biopsy specimens this does not happen.

DR DAVID M. DAVIDSON: This case was previously presented (not published) at the last meeting as one of Kaposi's pigmented hemorrhagic sarcoma. The diagnosis was not accepted by the majority of the members. Microscopic studies since then corroborated the diagnosis.

The fear that one experiences when there is a question of taking a biopsy specimen from malignant or semimalignant growths is due to the knowledge that such an operative procedure may precipitate activity or metastases. Kaposi's sarcoma, according to the present concept, does not metastasize; the lesions found in the internal organs are primary and may appear earlier than, simultaneously with or later than those of the skin.

Folliculitis Ulerythematosae Reticulata Presented by DR DAVID M. DAVIDSON

W. M., a woman aged 31, presented herself at the clinic of the Jewish Hospital with an eruption on her face of three years' duration. It began, according to her statement, as erythematous papules in the preauricular regions.

At present the eruption is symmetrically distributed and consists of a number of erythematous patches covering the forehead, preauricular regions, nasolabial folds and anterior and inferior aspects of the chin. Each patch produces a honeycomb appearance, being composed of closely crowded areas of atrophy the size of a small pinhead and tiny papules. Under diascopic pressure the papules are seen as yellowish brown spots. Telangiectasia is noted on the erythematous patches, and a moderate number of papulopustules are scattered over these areas.

DISCUSSION

DR L. FRUCHTBAUM: How should this condition be classified? Shall it be put in a group with lupus erythematosus, with the tuberculous diseases or with the infectious group?

DR C. THOMAS CHIARAMONTE: The lesions usually described for this condition do not conform, according to my opinion, to those in this case. The lesions and the depressions are not typical for this condition.

DR DAVID L. SATENSTEIN: This disease is just reticulated atrophy with erythema; I cannot see the follicular part as described by the presenter.

DR JACOB SKEER: The picture as presented may well fit in with the condition known as folliculitis ulerythematosae reticulata, except that the ridges are not as well defined as those which other writers have described. A little more erythema and telangiectasia would lead me to think of Lewandowsky's tuberculid. Another diagnosis that could be considered is lupus miliaris disseminatus faciei, but I cannot see any necrotic nodules.

DR A. GRACE, New York: I do not believe from the appearance of the patient tonight that a definite diagnosis can be made. If a piece of tissue were excised and examined by a competent pathologist, a diagnosis could be made more readily.

DR DAVID M. DAVIDSON: This patient was seen only once, and I have no histologic report at present. Clinically, the eruption might suggest one of the following conditions: Civatte's poikiloderma, Lewandowsky's tuberculid and folliculitis ulerythematosae reticulata. Civatte's poikiloderma, however, can be excluded on account of the papulofollicular atrophy and almost complete absence of pigmentation. Lewandowsky's tuberculid has most of the features here present but not, as far as I know, this peculiar atrophy. On the other hand, all the features shown by these erythematous patches together with their symmetric distribution fit in with the condition described as folliculitis ulerythematosae reticulata as nearly as any.

**Beginning Primary Syphilitic Atrophy of the Right Eye. Presented by
DR SAMUEL HECHT**

C N, a man aged 32, has a wife and a child aged 5 years. They are well as far as he knows.

The patient had a penile sore in 1929. No dark field examination was done, but the Wassermann reaction at that time was negative. He was told that the condition was trifling, and therefore he never took treatment. The rest of his history is irrelevant.

In September 1938 he had difficulty with the vision of his right eye. He came to the New York Polyclinic Medical School and Hospital where an examination showed beginning optic atrophy. The diagnosis was corroborated by the ophthalmologic department. The right pupil was dilated, the right fundus showed general pallor, with a narrow area of white in the temporal region.

The Wassermann reaction of the blood and of the spinal fluid were 4 plus. There were no other neurologic symptoms or signs.

On Dec 4, 1938, fever treatments with typhoid vaccine intravenously were begun. He was given eight of these, the temperature being elevated to from 104 to 106 F at each. As a result of treatment, there was at least 75 per cent improvement.

DISCUSSION

DR DAVID L. SATENSTEIN: I should like to know just what was meant when the presenter stated that in the atrophy there has been 75 per cent improvement. Atrophy is atrophy, and treatment does not change it.

DR L. J. FRANK: Primary syphilitic atrophy is not uncommon. When optic atrophy develops the patient should be referred to an ophthalmologist for a complete examination and advice as to further treatment. As far as treatment is concerned, I should not use the old arsphenamine. I think that this drug is contraindicated in the treatment of primary atrophy of the eye. I should prefer a milder preparation, such as neoarsphenamine or silver arsphenamine, and use it in small doses. If possible, I should dispense entirely with arsenicals and lean more to the use of heavy metals such as bismuth or mercury preparations.

DR ABRAHAM WALZER: What the presenter probably means to imply is that this man had bad vision with signs of optic atrophy which improved under treatment. Some of the loss of vision in all probability was not due to the destruction of the nerve but was caused by pressure symptoms from the inflammatory process in or around the nerve. Treatment cleared the inflammation but not the atrophy. Optic atrophy cannot be influenced by treatment.

DR JACOB SKEER: On examining the eyes with the ophthalmoscope, I gained the impression of right temporal pallor. On the left side of the right disk I noticed unusually tortuous vessels. I am in no position to say whether there has been any improvement. It is thought that one can get fairly good results with antisyphilitic therapy in secondary optic atrophy.

DR M. L. WEITZ, Jamaica, N. Y.: According to the history the patient had a penile lesion in 1929. I want to go back to that time, and what I am trying to do is to criticize the way the patient was handled at that time. The Wassermann reaction at the time the penile lesion was present was apparently reported as negative. I feel that if syphilis had been determined to be present at that time, optic atrophy might never have developed, because there is no doubt that the penile lesion was a chancre. If the patient had repeated Wassermann tests every two weeks, in spite of the fact that no dark field examination was done—or if it was done, it was negative—the presence of syphilis would have been determined, and if the patient had received the necessary treatment this ocular condition would never have developed.

DR SAMUEL HECHT: When this man came to me, his right eye showed decreased vision. Incidentally, I did not rely on myself but sent him to the

ophthalmologic department, which agreed with the diagnosis. I presented him mainly for treatment. I agree that the results in the vast majority of cases of optic atrophy are terrible, most patients go on to complete blindness. On the other hand, if the diagnosis of primary optic atrophy is made early enough one can obtain good results. I feel that fever treatment should be used first, followed by arsenical medication. There was a report before the American Medical Association this year of the use of tryparsamide in the treatment of atrophy of the optic nerve (Leinfelder, P. J. Pathologic Changes in Amblyopia Following Tryparsamide Therapy, *J A M A* **111** 1276 [Oct 1] 1938). I should not have enough nerve to use that drug, as I have seen some pretty bad results from it. I tried other means, but most of them proved failures in most cases. I think that if beginning optic atrophy were treated intensively, good results would be possible in some of the cases. When the results are good they are very good and last a long time.

Dermatitis Lichenoides Chronica Atrophicans (Csillag) Presented by
DR DAVID M. DAVIDSON

F. E., a Negro aged 67, is presented from the Trinity Hospital. He observed the first lesion of his eruption nineteen or twenty years ago on the right elbow, the latest lesion, which is on the abdomen, appeared four or five years ago.

At present there is a horizontal patch about 8 inches (20 cm.) long on the lower part of the abdomen, it is erythematous and depigmented, with a circinate and hyperpigmented border. The affected area is somewhat rough and wrinkled, a few dark red spots the size of a pinhead can be seen in the interior of the plaque. This large lesion is formed by the confluence of a few small patches, as shown by the configuration and the hyperpigmented spots scattered over the large patch.

Two small similar patches of oval shape are located below the large lesion. On the left wrist and the right elbow are similar lesions of irregular shape.

A few large dry scales, mostly detached from the skin, were observed on the patches when the patient was first seen, about three weeks ago.

The Wassermann and the Kline test gave negative results.

Microscopic examination showed dermatitis lichenoides chronica atrophicans.

DISCUSSION

DR DAVID M. DAVIDSON: Dermatitis lichenoides chronica atrophicans is a rare disease and is worth presenting, especially in a Negro. Clinically, it is often confused with lichen sclerosus et atrophicus (Hallopau) and scleroderma, therefore microscopic examination is essential. The diagnosis in this case was corroborated by microscopic study.

DR C. THOMAS CHIARAMONTE: I was unable to discern any papules within or in the vicinity of the lesion on the lower part of the abdomen, the surface of which was not smooth or atrophic. In view of the duration of the lesion and the presence of cross striations in it, I should prefer a diagnosis of neurodermatitis.

DR L. J. FRANK: It seemed to me as though there were sharply outlined infiltrated and shining patches. I could not make out any individual papules. The border of the lesion is pigmented, but I think that in most cases of neurodermatitis one would expect to find pigmentation after a while. The excoriations are not uncommon in neurodermatitis. I have not seen many Negroes with dermatitis lichenoides chronica atrophicans. A microscopic examination should help in making the diagnosis. Judging from the clinical aspect, I think this case is one of neurodermatitis.

DR ABRAHAM WALZER: I do not think there is any question as to atrophy, and therefore I cannot see how a diagnosis can be made at this stage, when there are no primary lesions. Concerning the histologic report, I was always under the impression that the histologic structure of Csillag's disease was not definite,

and the histologic diagnosis was made only by exclusion of lichen and other conditions. The diagnosis of Csillag's disease is made on a clinical and not a histologic basis.

DR SEYMOUR H SILVERS. When I examined this patient I failed to see atrophy. Other examiners, however, were sure that they saw atrophy of the skin. This brings up the question of what are clinically the criteria of cutaneous atrophy. That they are vague is evident from the fact that different examiners at the same time read the skin differently. Dr Davidson told me that the epidermis looked normal under the microscope.

DR L M WATERHOUSE, New York. I did not see this patient, but Dr Walzer thought the condition was Csillag's disease. I never have found out precisely what Csillag's disease is. The differentiation between Csillag's disease, lichen albus of von Zumbusch, the guttate type of morphea, lichen planus sclerosus et atrophicus of Hallopeau and lichen morphoeicus of Crocker is difficult. I have heard a great many discussions at conferences concerning these diseases, but no one has ever seemed to have any clear idea of the difference between them. I should like to know how to differentiate them.

DR A GRACE, New York. It is my impression that this patient has neurodermatitis. I agree with Dr Chiaramonte that there is no atrophy.

DR MORTIMER J CANTOR. I think that the diagnosis should rest on the proper history of the initial lesion, and that is not available. The history does not say what it was like. In view of the fact that the end process is present, it is really impossible to tell what might have been, i e, lichen planus, morphea, a patch of scleroderma or papules characteristic of Csillag's disease. These entities may end in the same way. Of course the histologic picture right now is important, and I should like to hear from some one who examined the slides.

Acrodermatitis Chronica Atrophicans Trophic Ulcers Eczema Unilateral Enlargement of the Thyroid Gland. Presented by DR SEYMOUR H SILVERS

J K, a white housewife aged 54, born in Austria, is presented from the Wyckoff Heights Hospital. She complains of ulcerations on the lower part of the left leg of one year's duration. She has always enjoyed good health, has not lost weight, is not excessively nervous, sleeps fairly well and does not suffer from diarrhea. She has given birth to 7 children, 2 of whom died during childhood. The others are living and well. Since early childhood, she has had an enlarged mass in the front portion of the neck. One year ago she received six injections for varicose veins. At the site of one injection a red scaly patch developed.

Examination shows her to be thin, with an orange-sized semisolid mass in the front portion of the neck, right off the midline. The skin of the upper extremities is violaceous and has a soft doughy feeling. The same color and feeling of the skin are present on the upper half of the thighs. The skin of the dorsa of the hands approaching the fingers is thinned. The skin of the feet, legs, knees and lower areas of the thighs is thinned, showing the subcutaneous vessels. The color is bluish to violaceous, and the consistency of the skin is papery. There is a dollar-sized irregular scaly and somewhat crusted red patch on the upper inner side of the left leg. On the lower third of the same leg, in the region of the ankle, there are two pea-sized deep-seated ulcers and the skin is drawn tight and is shiny.

The Wassermann test was reported to be negative. Examination of the urine showed no abnormality.

DISCUSSION

DR DAVID L SATENSTEIN. I should like to say something only as a warning. When a patient has acrodermatitis chronica with dilated veins resulting, the veins should be let alone, because the physician will be subject to a lawsuit. The tissue will not stand the damage done, and a great deal of breaking down might ensue.

DR SEYMOUR H SILVERS I believe that this patient has fairly typical acrodermatitis chronica atrophicans

I am glad that Dr Satenstein cautioned against thrombosing the veins in treating this disease. When I first saw this patient and obtained the history that she had received injections for varicose veins, I was sure that the physician had missed the diagnosis, and because of this, I took the privilege of showing what is usually considered a typical condition. The areas which now show ulceration and patches of eczema are those where injections were given.

Lichen Spinulosus Presented by **DR MORTIMER J CANTOR**

M J, a boy aged 12 years, American born of Italian parentage, was first seen on Dec 20, 1938, at the dermatologic clinic of the Beth Moses Hospital. There was nothing of any importance in his past history. The eruption was of about two months' duration.

At present he has a sparsely scattered eruption on the back, chest, upper extremities and nape of the neck, consisting of dime-sized to quarter-sized patches appearing in crops. They are mildly erythematous, enlarge progressively and fade gradually. There are discrete individual papules in addition to those composing the patches. The patches are composed of minute papules situated about the follicles, and many have a projecting horny spine, some barely perceptible to the touch and others protruding about $\frac{1}{16}$ inch (0.16 cm) above the surface of the skin. The shorter type of spine is visible as dark brown or black debris in the follicular opening.

Physical examination revealed a well developed robust boy with no essential abnormality.

Urinalysis gave normal results.

Histologic examination of a section from the supraclavicular patch corroborated the clinical diagnosis.

DISCUSSION

There was no discussion. The diagnosis was unanimously agreed on.

Acrodermatitis Chronica Atrophicans with Pseudosclerodermal Changes Presented by **DR ABRAHAM WALZER**

F B, a woman aged 72, has been an inmate of the Jewish Sanitarium and Hospital for Chronic Diseases for four years, because of right hemiplegia and chronic heart disease. The condition of her skin dates back about forty years.

The dermatitis is symmetrically distributed on the backs of the hands, forearms, lower extremities, buttocks and lumbar region. The eruption begins with bright red to dusky red patches of various shapes and sizes. With further progress of the disease, some of these patches become slightly elevated and infiltrated. Ultimately the skin on these areas becomes loose and wrinkled, is easily raised from the underlying tissues and assumes the appearance of wrinkled cigaret paper. The veins in these locations shine through the wrinkled skin indicating that the skin has been thinned.

On the ulnar side of each forearm is a strip of erythema which shows atrophic areas of skin and extends from the wrist to the elbow. Below the right elbow posteriorly is a dime-sized hard nodule, embedded in and below the skin.

Almost completely surrounding the middle third of each leg, like a cuff, and apparently within the atrophic area, is dirty white induration. It is smooth on the surface, but irregular and not sharply demarcated. It is bordered above and below by atrophic skin. In this area the sensation given to the palpating finger is that the induration is composed of bands of deep irregular infiltration.

On the lower anterior part of each thigh, just above the knee is a boggy tumor the size of a large fist, surmounted by atrophic skin and easily movable in all directions.

Roentgen examination of the skull, the long and small bones of the extremities, the hip bones and the chest revealed nothing abnormal except mild arthritic changes in some of the smaller joints. In addition, roentgen examination of the lower third of the thighs and legs showed a diffuse network-like spread of calcareous deposits in and under the skin but not in the muscles.

Chemical examinations of the blood, blood counts, examinations of the urine, and determinations of the basal metabolic rate gave results within normal limits. Wassermann tests were negative.

DISCUSSION

DR JACOB SKEER This patient has fairly widespread acrodermatitis chronica atrophicans. What interests me most is the pseudoscleroderma condition of the legs. Many cases of calcinosis in association with scleroderma have been reported, but none that I can remember in connection with acrodermatitis chronica atrophicans. It is possible that this case is one of acrodermatitis chronica atrophicans with calcinosis, which is rare.

DR DAVID M DAIDSON Every one here will agree that this patient presents acrodermatitis chronica atrophicans. The interesting point, however, is the calcium deposition in the skin of the legs and thighs, shown by the roentgenograms. The combination of calcium deposits in the tissues and acrodermatitis chronica atrophicans must be rare. The presence of calcium deposits in scleroderma is also rare but is observed now and then. The explanation of its pathogenesis is based on the decreased metabolic activity of the tissues owing to fibrosis and hence to low carbon dioxide tension and the ability of calcium to precipitate in such tissues, which are more alkaline than normal. The normal calcium content of the blood is preserved by the replacement by the action of the parathyroids of the blood's lost calcium with calcium of the bones. I wonder whether this hypothesis can explain also the calcium deposits in cases of acrodermatitis chronica atrophicans.

DR ABRAHAM WALZER In about 40 per cent of cases of acrodermatitis chronica atrophicans such areas of pseudoscleroderma are present. Histologic sections of pseudoscleroderma in acrodermatitis chronica atrophicans show a picture not of scleroderma but of acrodermatitis atrophicans. There is atrophy of the elastic tissue plus plasma cell infiltration.

DR MORTIMER J CANTOR I might suggest that perhaps the reason other physicians have not found calcium in so-called pseudoscleroderma or pseudoscleroderma-like areas in acrodermatitis chronica atrophicans is because they seldom take roentgenograms, as Dr Walzer has done.

DR ABRAHAM WALZER It is necessary to distinguish between calcinosis and the presence of calcium deposits. Where there is a suppression of activity, as in the tissue in scleroderma or in dead tissue, there is a natural tendency for calcium to be deposited. This is not due to true calcinosis but just to a local process. There are no changes in the blood calcium in this case, a not infrequent finding also in true calcinosis. This condition is not true calcinosis but a localized process in which calcium has been deposited as a result of some local change.

Parapsoriasis Varioliformis et Lichenoides Presented by DR SEYMOUR H SILVERS

A U, a school boy aged 15, is presented from the Wyckoff Heights Hospital, complaining of a generalized eruption, only slightly itchy, of over seven months' duration. He was always well. His twin sister is living and well. There is no history of acute illness or an operation. About seventeen months ago the eruption first appeared all over the body. A doctor suggested the diagnosis of chickenpox. The eruption did not run the usual course for this disease. New lesions appeared constantly, while the older ones formed dry patches.

When presented eight months ago, with a diagnosis of parapsoriasis varioliformis, examination showed him to be oversized and obese, with fair skin and

signs of Frohlich's syndrome. Scattered over the body were numerous discrete and patchy lesions. These consisted of isolated pea-sized papules and vesicles, appearing singly or in patches, on a slightly inflammatory base. The older lesions were brownish red, scaly and somewhat infiltrated. The patches varied in size from that of a dime to that of a half dollar. New lesions were constantly appearing, while the older ones involuted, leaving pigmentation and faint scars.

Since that time he has received only local therapy with 2 per cent ammoniated mercury ointment and bland lotions. Examination now shows, scattered over the trunk and extremities, patches of papules varying in size from that of a lentil to that of a pea and somewhat infiltrated and thickened. Some are scaly. There are also healed pigmented areas and fine pinhead-sized scars.

The Wassermann reaction was negative. The urine was normal. A microscopic section of an early lesion showed mild parakeratosis, evidence of some degeneration of the cells of the rete pegs, beginning disorganization of the basal layer, vascular dilatation and round cell infiltration of the papillary and subepidermal regions.

DISCUSSION

DR JACOB SKEER. When the patient was first presented I think I agreed with the diagnosis. At this time there is no evidence of parapsoriasis varioliformis. I also do not note any lichenoid lesions or large erythematous plaques. The lesions tonight, as I see them, are small infiltrated psoriasiform lesions, discrete, with little coalescence and bleeding points on removal of scales. I do not notice healed scars, such as one sees in papulonecrotic tuberculi, some lesions on the forearm show pigmentation.

DR DAVID M. DAVIDSON. I agree with the diagnosis of parapsoriasis varioliformis, as the small erythematous scaly patches, the lichenoid lesions and the variola-like scars presented by this patient are characteristic of this disease.

DR SEYMOUR H. SILVERS. Today this patient shows few of the varioliform lesions, but the members may recall that when he was presented eight months ago, he showed few of the lichenoid lesions and a great number of varioliform lesions. The first time I saw the patient was nine months after the eruption first appeared. At present this boy presents more of the characteristics of lichenoid than of varioliformis parapsoriasis.

Multiple Pigmentary and Hairy Nevus. Presented by DR M. EDWARD GOEBEL.

F. R., a girl aged 5 years, since birth has presented multiple pigmentary and hairy nevus over the back and face and a rather extensive one involving the left hand, forearm and lower third of the arm. It is believed that these nevi are becoming lighter in color.

DISCUSSION

DR M. EDWARD GOEBEL. This patient is presented not for diagnosis but for suggestions as to therapy. I am open to suggestions.

DR M. L. WEITZ, Jamaica, N. Y. I saw this child about one and one-half years ago at the Queens General Hospital, Jamaica, N. Y. Men on the staff of the tumor clinic were called in and we all finally came to the conclusion that nothing should be attempted and that the lesions should be left alone.

DR MORTIMER J. CANTOR. All the lesions, no doubt, should be left alone.

DR SEYMOUR H. SILVERS. I have nothing to offer therapeutically in a positive sense. In a negative sense, however, it would be good therapeutics to impress on the patient the fact that at the present state of medical knowledge more harm than good may be done by treatment. Two days ago I was consulted by a patient with a flat blue vascular nevus about the size of a nickel on the side of the nose. There was also a lentil-sized depressed opening, resulting from treatment with radium needles. Two years of treatment and observation left the patient with a worse cosmetic result.

MINNESOTA DERMATOLOGICAL SOCIETY

LOUIS A BRUNSTING, M D, *President**Minneapolis, Dec 2, 1938*F W LYNCH, M D, *Secretary***Syphilis Possible Infectious Arthritis** Presented by DR S E SWEITZER, Minneapolis

M G, a white girl aged 14, acquired primary syphilis about two months ago. Soon after her exposure a purulent vaginal discharge developed and did not clear up. She was admitted to the Minneapolis General Hospital one month after exposure, at which time both serologic and dark field examinations showed syphilis, however, repeated cervical and urethral smears showed no sign of gonorrhea. Immediately after the diagnosis of syphilis was made, the patient was given neoarsphenamine intravenously every other day, 0.3 Gm for three doses and 0.45 Gm for one dose. Thirty-six hours after her last injection she complained of severe pain, tenderness and swelling in the proximal interphalangeal joints of the right thumb and fifth finger and the left fifth finger. Because of the impossibility of making a positive diagnosis of gonorrheal arthritis, symptomatic therapy with salicylates and local heat was instituted. The condition of the joints improved but did not clear up completely. There were scattered petechiae over the left wrist and forearm at the onset of the arthritis, and because of the possibility that these were a reaction to neoarsphenamine, intramuscular bismuth therapy was begun.

There are marked tenderness and some swelling over the proximal interphalangeal joints of the left thumb and fifth finger and some tenderness of the same joint on the right fifth finger. Motion is limited in these joints, and the involved fingers are held in the semiflexed position.

Roentgenograms showed destructive arthritis of the proximal interphalangeal joints of the right thumb and fifth finger. The complement fixation test for gonorrhea was negative.

DISCUSSION

DR F T BECKER, Duluth (by invitation). The patient gave a history of repeated sore throat accompanied with migratory articular symptoms. This would lead me to believe, in the absence of positive evidence of gonorrhea and with the multiple joints involved, that the condition is probably rheumatoid arthritis, the general resistance being lowered because of recent infection with syphilis.

DR S E SWEITZER, Minneapolis. This young lady has infectious arthritis and more than likely has gonorrhea. The complement fixation test was negative, it is true, but it is not always positive for patients with gonorrhea anyway. Smears were negative also, and this is inconclusive.

Dermatitis Herpetiformis Presented by DR S E SWEITZER, Minneapolis.

O D, a white girl aged 9 years, has a generalized, mildly pruritic eruption consisting of blebs and erythematous areas, which developed after an attack of scarlet fever three years ago. The eruption was diagnosed as "pemphigus." Since the onset the eruption has decreased and symptoms of pruritus grown less marked.

A symmetric eruption involves the axillas, wrists, hands and vulva. The lesions are grouped tense vesicles and blebs, surrounded by erythematous zones. The fluid content of the vesicles at the onset is clear, later becoming purulent if the vesicles are not ruptured. Other areas of skin show hyperpigmentation and depigmentation, representing sites of previous lesions. Nikolsky's sign is not present. Histologic sections are shown.

DISCUSSION

DR LOUIS A BRUNSTING, Rochester Dermatitis herpetiformis is rare in childhood, and a number of features in this case are atypical. Urticarial lesions are absent. On the hands there are infected undermined pustules such as are seen in acrodermatitis continua.

DR H E MICHELSON, Minneapolis I think those of the members who attended the clinic in San Francisco were impressed by the discussion's bringing out the facts that dermatitis herpetiformis can be different in childhood, that the lesions often look like pemphigus and that the prognosis is better. Germanin has been used in such cases with success, but I do not know if I would recommend it unless the condition was not responding to any other medication.

DR S E SWEITZER, Minneapolis This patient had a group of lesions on the back. I have had her under observation for some time. At the moment she has lesions in the axilla.

Lichen Urticatus Presented by DR S E SWEITZER, Minneapolis

M K, a boy aged 8 years, has had severe itching of the face, arms, neck and legs since an attack of smallpox at the age of 1 year. He has had exacerbations and remissions since the onset. The itching is worse in the winter. He has used black salve (a coal tar preparation) without relief, saponated solution of cresol has given some relief.

The patient appears to be somewhat malnourished and of small stature. Over the face, neck, arms and legs are many excoriations and pigmented scars. The skin over the arms is slightly lichenified.

DISCUSSION

DR H A CUMMING, Minneapolis (by invitation) The general impression given by Erich Urbach in his recent treatment of his subject (*Skin Diseases and Nutrition, Including the Dermatoses of Children*, Vienna, Wilhelm Maudrich, 1932) is that in most cases this condition is the result of one or many hypersensitivities—in other words, is on an allergic basis. That was challenged by F Hamburger, who expressed the opinion that it was usually the result of insect bites.

Urbach, on the basis of 225 closely observed cases, attempted to substantiate his opinion by showing fairly good results from strict allergic management. It is interesting to note that most of the patients are children who seem to be malnourished and come from the lower walks of life.

DR ELMER M RUSTEN, Minneapolis These children have one striking characteristic—extensive cutaneous reactions to scratch and intracutaneous tests. The elimination of the causative substances from the diet or environment does not alter signs or symptoms. Dietary imbalance—not necessarily deficiency—appears to be more important than contact with specific allergens, and when this is corrected the patients improve.

DR STEPHAN EPSTEIN, Marshfield, Wis (associate member) The papular eruption involving the arms and legs of a boy of 7 years could be called prurigo mitis of Hebra as well. There are enlarged glands in both axillae. The differentiation may be of minor significance, as both conditions probably belong to the same allergic group.

DR CARL LAYMON, Minneapolis The remarks of Drs Epstein and Rusten agree with the conclusions drawn by Abraham Walzer and Max Grolnick in their study of papular urticaria (*J Allergy* 5:240 [March] 1934), namely, that the disease is probably atopic. In their experience, however, specific therapy based on cutaneous tests was of no avail.

DR S E SWEITZER, Minneapolis In Europe prurigo mitis occurs, but here it is not seen. In our cases the picture fits in with lichen urticatus. This condition looks to me like severe lichen urticatus. It was three times as bad two weeks ago.

DR H E MICHELSON, Minneapolis I think lichen urticatus should be looked on as a papular urticaria of childhood That does not explain the causation, it is true, but the clinical appearance is definite The lesions are conic papules capped by a small vesicle The patient in scratching excavates the tip of the papule, which releases the fluid in the small vesicle The secretion coagulates into a tiny crust, so that one usually notices crusted papules The lesions are on the extensor surface of the forearms and on the face, especially the forehead, as well as in the anterior part of the tibial region In cases of true prurigo these lesions are present and in addition lichenification, pigmentation, eczematization and adenitis Prurigo is a much more severe disease and seems to be as closely related to dermatitis herpetiformis as to atopic eczema Certainly the subjective symptoms are the most striking Prurigo is chronic and seems to affect the entire being The patients are often retarded mentally and become a type which, at least in Vienna clinics, used to be recognized as characteristic for prurigo

A Case for Diagnosis (Light Sensitivity Dermatitis?). Presented by Dr S E SWEITZER, Minneapolis

M T, a Negress aged 63, first noticed itching of her right arm about six months ago Gradually various other areas became involved, especially after exposure to sunlight during fishing The itching became severe over the dorsa of both forearms and around the neck over the exposed parts She noticed that her skin was becoming darker over the itchy areas She had received two injections of neoarsphenamine for syphilis previous to the onset of this trouble Many salves and lotions were used without relief Her past health had been excellent

Darkly pigmented rather sharply outlined areas on the flexor and extensor aspects of both arms extend from just above the elbow to the wrist The skin shows some thickening and accentuation of the lines of cleavage but no other lesions except a few small scars, probably from excoriations A similar involvement extends around the neck, limited to the exposed surfaces

Histologic sections are shown

A Case for Diagnosis (Eczema Due to Light? Lupus Erythematosus?). Presented by Dr H E MICHELSON, Minneapolis

E B, a white woman aged 39, first noticed an eruption on the face when she was 7 years old Until about 1930 the lesions disappeared during the winter Since then they have been practically constant, improving but slightly during the winter The lesions are pruritic Only the face, the "v" area of the neck and the arms have been affected The eruption seems to flare up after exposure to the sun's rays But little improvement has followed roentgen therapy and application of various light-protective pastes

The lesions are located on the face, neck and arms They appear as scaly erythematous patches There is no actual vesiculation, atrophy, scarring or follicular dilatation

Studies of the urine for porphyrin by Dr Cecil Watson gave negative results on two occasions

DISCUSSION ON PAPERS OF DRS SWEITZER AND MICHELSON

DR S E SWEITZER, Minneapolis I thought the first patient might have arsenical eruption She had had two injections of neoarsphenamine in August and another in October, but she had had the eruption before that time Localization was around areas of the neck

DR ELMER M RUSTEN, Minneapolis The Negress has a history of an increase in the eruption on exposure to light, which is uncommon It is not probable that this factor alone caused the dermatitis, more likely it only irritated a previous eruption, probably a contact dermatitis

DR STEPHAN EPSTEIN, Marshfield, Wis (associate member) As far as the first case is concerned, I recall the case of M Juon (*Arch f Dermat u Syph*

156 355, 1928), of the simultaneous development of hypersensitivity to light, to neoarsphenamine and to mercury after antisyphilitic treatment. I should like to know whether analogous cutaneous tests have been performed in this case. The second case appears to me to be an instance of typical prurigo aestivalis (summer prurigo). Experimental studies in cases of that disease not infrequently have been confined to the hypersensitivity to light alone. It may be worth while to study them with regard to a possible allergic and photoallergic background.

DR F W LYNCH, St Paul. There is a rather close relation between light sensitivity and a number of metals, including arsenic and mercury. In argyria one frequently observes clinical phenomena only in areas exposed to light, although microscopic studies may demonstrate silver in covered areas without clinical change. In a case recently recorded, a person exposed himself to sunlight frequently during the summer months, with no unusual effect. In the fall he was given injections of pituitary extract for a possible endocrine disturbance. With no further exposure to light, hyperpigmentation developed only on areas not covered by his bathing suit in the summer months, suggesting a clinical relation between the pigmentation and the pituitary medication. In lower animals it has been demonstrated that the middle lobe of the pituitary gland secretes a substance, intermedin, which has much to do with the production of pigment in the skin.

DR LOUIS A BRUNSTING, Rochester. The appearance of the eruption suggests papular atopic dermatitis limited to the exposed surfaces, probably conditioned by exposure to light. The various investigative procedures have given no clue to causation. Disturbances of porphyrin metabolism are not concerned in this type of disease. I do not think the condition is lupus erythematosus, in spite of the suggestive histologic picture.

Leukonychia Presented by DR H E MICHFISON, Minneapolis

R B, a white youth aged 14, states that his finger nails have gradually turned white during the past six years. He has been nervous since birth and has bitten his nails constantly. The left index finger and right middle finger were first affected.

All the nails of the left hand and the second and third right finger nails are white. The left thumb nail appears to be undergoing a similar change. The toe nails are normal.

Neurologic examination gave negative results.

The patient was adjudged to be of normal or average intelligence by the child psychiatry department.

DISCUSSION

DR CARL LAYMON, Minneapolis. Leukonychia is usually of the punctate or striate variety, whereas the total type present tonight is extremely rare. The whiteness is thought by some authorities to be due to the presence of small amounts of air between the nail cells, while others believe it due merely to abnormal cornification. The etiologic factors of leukonychia totalis remain unknown.

Leukemia Presented by DR S E SWETZER, Minneapolis

M L, a white woman aged 64, first noticed an eruption on her legs in August 1938. The itching was severe, and the patient was extremely uncomfortable. She was treated with local applications, and the eruption cleared completely. About six weeks ago it again appeared on her legs. It has been present since that time.

Two years ago the patient was found to be suffering from chronic lymphatic leukemia, for which she was given roentgen therapy. Otherwise her past health has been fair.

There are many scattered macular, papular and excoriated lesions over both legs and thighs. The older lesions are light brown and have a dry branny scale.

The new lesions are papulovesicular with an erythematous base and are extremely itchy. The lesions vary in size from that of the head of a match to that of a nickel.

Histologic sections are shown.

The urine was normal. The white blood cell count was 92,800, with 20 per cent polymorphonuclears, 75 per cent lymphocytes, 3 per cent monocytes and 2 per cent eosinophils. Study of sections established a diagnosis of chronic lymphatic leukemia.

DISCUSSION

DR PAUL A. O'LEARY, Rochester. I disapprove of calling the lesions leukemid, because to me this picture is one of toxic pruritus such as is encountered in patients with leukemia. When the histologic picture of an excised cutaneous lesion does not show the characteristic cytologic changes of leukemia, the use of the term leukemid is unwarranted, and as I understand it, the histologic picture in this case was not specific.

DR F. W. LYNCH, St. Paul. The term leukemid was introduced by Audry forty years ago, when he applied it as a descriptive term for those eruptions associated with leukemia without the clinical characteristics of true leukaemia cutis and a specific histologic structure. Since that time the terms leukemid and leukaemia cutis have been used, respectively, to describe the nonspecific and the specific eruption. In recent years there has been a tendency to disregard this sharp division between the eruptions, since in a few cases of a nonspecific microscopic structure the clinical appearance has been characteristic of leukaemia cutis, and in other cases of a clinically nonspecific picture the microscopic structure has been that of true leukaemia cutis. The two terms should probably be retained for convenience in discussions, but it seems likely that the dividing line is not a sharp one.

Reticuloendotheliosis. Presented by DR S. E. SWITZER, Minneapolis.

H. K., a white boy aged 3 years, first had some difficulty in walking about six months ago. His toes would point in, and he would stumble and fall. An eruption developed over his body about the same time. According to the parents it began as small blisters, which ruptured when scratched. The eruption became generalized soon after the onset and has remained so. The child has never been a good eater, which fact has been especially noticeable during the past two or three months. He has lost considerable weight during his six months of illness, and difficulty in speaking has developed. The family history is irrelevant.

The patient is poorly nourished, pale and unresponsive. Many yellowish brown firm papular lesions are scattered over his body. They are especially numerous on the face. Many of the lesions have been excoriated, and some of the more recent ones have a hemorrhagic appearance. They vary in size from that of the head of a pin to that of a peanut.

The urine was normal. The hemoglobin concentration was 52 per cent, the white blood cell count 15,250 and the red blood cell count 3,440,000, the differential count showed 81 per cent polymorphonuclear cells, 16.5 per cent lymphocytes, 0.5 per cent eosinophils and 2 per cent monocytes. The blood sugar value was 70 mg, calcium 11.5 mg and the cholesterol 172 mg per hundred cubic centimeters. The spinal fluid showed protein 45 mg, sugar 48 mg and no cells. The Wassermann reaction of the blood was negative. Cultures of material from the nose and throat were negative. The Mantoux test with a 1:10,000 dilution was negative. Roentgen studies of the chest and lungs gave negative results. The bones showed (1) erosion or cystic appearance in the sixth rib on the right side, consistent with a tumor, (2) a destructive appearance on the right side of the pelvis, with destruction of the acetabulum and no new bone formation, (3) destruction of the distal portion of the shaft of the left femur, rarefaction with periosteal new bone formation and pathologic fracture of the left femur, (4) destruction of the entire first lumbar vertebra, and (5) normal hands, wrists, arms and skull.

The histologic picture of the skin seemed to be consistent with a diagnosis of reticuloendotheliosis.

DISCUSSION

Dr F. W. LYNCH, St. Paul: I think this case deserves discussion because in few such cases is the diagnosis made ante mortem. The studies in this case are complete, and the diagnosis appears to be correct. In these microscopic sections, as in the cases I observed at the University of Minnesota Medical School, one cannot differentiate with certainty between monocytic leukaemia cutis and reticulo-endotheliosis, but the hematologic studies ruled out the former disease.

A Case for Diagnosis (Possible Besnier-Boeck-Schaumann Disease?)

Presented by Dr H. I. MITCHELSON, Minneapolis

R. A., a white woman aged 37, noticed gradual formation of nodules over her body after treatment for a cutaneous disease diagnosed as scabies about one year ago. Some of these lesions have since disappeared. She has suffered from malaise, anorexia and fatigue since that time and has lost about 30 pounds (13.6 Kg). There has been no pruritus, itching or burning. She was treated with a sulfur ointment at first and later with zinc oxide ointment.

The patient appears greatly emaciated. Her posture is poor, and she walks with a limp. There is a generalized increase in cutaneous pigmentation, especially on the exposed surfaces. On the face, trunk and upper extremities there are numerous nodular and plaque-like lesions, which are reddish brown and appear to be located over those portions of the body which are exposed to pressure. There are no lesions on the lower extremities. Pathologic sections were shown.

Urinalysis showed no abnormality. The Wassermann reaction of the blood was negative. The calcium, sugar and phosphorus contents of the blood were normal. The cholesterol content was 250 mg per hundred cubic centimeters. The basal metabolic rate was +73 per cent. Gastric analysis showed free hydrochloric acid following administration of histamine. Roentgen studies of the chest were normal. The hands showed multiple sharply circumscribed punched out areas. The long bones were normal.

DISCUSSION

Dr I. F. WILSON, Minneapolis (by invitation): It has never been possible to make a positive diagnosis in this case. The original biopsy specimen from the shoulder, did not present a typical histologic picture of sarcoid. The second biopsy specimen, taken from the chin, showed a picture considered by Dr E. I. Bell, of the pathology department, to be consistent with the diagnosis of sarcoid. An interesting feature in this case is the basal metabolic rate. In July, when first studied, it was +56 per cent. A determination on October 21 showed it to have increased to +73 per cent. There were no evidences of thyroid disturbance.

Dr PAUL A. O'LEARY, Rochester: I agree that this patient does not have Schaumann's disease. I have seen grape-like masses such as she presents in a patient who had cutaneous metastases from hypernephroma.

Dr CARL LAYMAN, Minneapolis: At the first examination diagnoses of sarcoid, metastatic malignant growth, lymphoblastoma and some form of lipoidosis were considered. It was impossible to align the process with ordinary xanthoma on account of the lack of foam cells and intracellular lipid masses in any of the sections. The nodules on the hands and the histologic picture are not unlike those in the case of extracellular cholesterosis observed at some of the meetings of this society several years ago (ARCH. DERMAT. & SYPH. 35:269 [Feb.] 1937).

Dr H. I. MITCHELSON, Minneapolis: I am not willing to commit myself on the diagnosis in this case. However, I am inclined to think that the diagnosis of sarcoid is incorrect. The sections certainly are not those of sarcoid. There is some resemblance to a form of fat disturbance.

A Case for Diagnosis (Pigmentation Due to Copper?) Presented by Dr S. E. SWITZER, Minneapolis

J. Z., a white man aged 59, first noticed a slight discoloration of his skin about one and one-half years ago. He noticed this after he had had a hernia treated

by the injection method. As time went on his skin became darker. There was no itching or discomfort of any kind. He took a moderate amount of "Harlem oil" for some urinary complaint. In July 1938 he suffered a pathologic fracture of the tibia and was admitted to the hospital because of its nonunion. His past health had been good, and he had worked at his occupation as a horse handler for years.

There is a rather diffuse mottled appearance of the skin, more pronounced on the face, neck, hands and arms. The discolored areas are bluish gray and discrete and vary in size from that of a pinhead to that of the head of a match. There are no excoriations or other cutaneous blemishes.

Both excision and punch biopsy were done. The histologic picture was that of degenerated oval hyaline masses, well circumscribed in the upper part of the cutis.

Spectroscopic examination of the skin showed a copper line of 0.1 to 1.8 per cent (within normal limits).

Urinalysis showed no abnormality. Bence Jones proteins, alkapton bodies and melanin were absent. A blood count showed 74 per cent hemoglobin, 3,930,000 red cells and 9,050 white cells, with a differential count of 61 per cent neutrophils, 31 per cent lymphocytes, 6 per cent monocytes and 2 per cent eosinophils. The Wassermann reaction was negative. The blood calcium content was 10.8 mg, the phosphorus 3.8 mg and the phospholipin 4.9 to 4.1 units. Roentgenograms revealed cystic changes of both femurs, but showed normal skull, humeri, ribs and lungs.

DISCUSSION

DR PAUL A. O'LEARY, Rochester. The appearance of such unusual pigmentation in a person who does not work with copper or other metals brings to mind patients with lymphosarcoma who have manifested similar pigmentation about the face. The fact that he has had the pigmentation for a year and a half and does not as yet have palpable adenopathy does not as yet eliminate lymphosarcoma as a possible cause of the discoloration.

DR LOUIS A. BRUNSTING, Rochester. This is pigmentation of a most unusual type. Perhaps ochronosis should be given more consideration.

DR CARL LAYMON, Minneapolis. The patient worked with tar for several years. Could this dermatosis fit in with so-called lichenoid melanodermatitis due to contact with tar?

A Case for Diagnosis (Pustular Psoriasis? Seborrheic Dermatitis? Avitaminosis?) Presented by DR S. E. SWEITZER and DR ELMER M. RUSTEN, Minneapolis

M. S., a white woman aged 28, has had trouble with her skin since the age of 6 months. The eruption was always more severe during the hot summer months, although she was unable to state any definite time at which it became aggravated. For six years she has suffered from seasonal asthma, which has been associated with hay fever during the last two years. The onset had always been during the last week of July and the termination with the coming of frost.

There were no allergic diseases in members of the family except the maternal grandfather, who had asthma. During treatment for her hay fever this year her cutaneous condition was definitely aggravated by one injection of a solution containing ragweed and sagebrush pollen, although subsequent injections produced no noticeable exacerbation. The patient was hospitalized about the middle of July, after which improvement was rapid under local therapy with ointment of crude coal tar and ultraviolet rays. At the onset of ragweed pollenization (August 15), mild symptoms of hay fever developed, as well as weeping erythematous lesions about the nose, axillas and groin.

There is a generalized thinning of the hair on the scalp, with patches of total alopecia. The skin in these areas is atrophic and smooth. The greater part of her eyebrows is gone, and there is complete absence of eyelashes. Both corneas are cloudy, and there is some ectropion of the left lower eyelid. There are

scattered erythematous scaly lesions over the face. The axillas, popliteal spaces, feet and groin show a rather diffuse weeping erythematous eruption, which is scaly and crusting in spots. Fissures in the natural folds of the skin are painful. Several of the finger nails show a watch crystal deformity.

Histologic sections are shown.

DISCUSSION

DR LOUIS A. BRUNSTING, Rochester. I think this condition is seborrheic eczema in the broad sense, and there is superimposed pyogenic involvement.

DR F. T. BECKER, Duluth (by invitation). Recent German work has brought out a new vitamin, H, which appears to be of therapeutic value in seborrhea. This was first introduced as the X factor and was apparently specific for rat seborrhea. E. Gyorgyi (in von Pfaundler, M., and Schlossmann, A. *Handbuch der Kinderheilkunde*, vol. 10, p. 45, Leipzig, F. C. W. Vogel, 1935) has found this substance efficacious in the treatment of seborrheic eczema of infants and adults. Although vitamin H has not been isolated in pure form, it is believed to be found in large quantities in beef liver, milk, potatoes, brewers' yeast and bananas. Vitamin H is necessary for the proper maintenance of normal cutaneous fat metabolism. A reduction in the intake of fat and egg yolk and the addition of foods containing vitamin H was efficacious in Gyorgyi's hands.

DR ELMER M. RUSTEN, Minneapolis. I agree with Dr. Brunsting. This patient has neurodermatitis in seborrheic areas, and there is a definite relation of her symptoms to her hay fever and menstrual disturbances. When either are severe the cutaneous symptoms increase.

Panniculitis. Presented by DR S. E. SWITZER, Minneapolis.

C. P., a woman aged 70, first noticed several discolored areas on the dorsa of her hands one month ago. These areas were not tender and did not itch. Two weeks ago red swollen hot moderately painful areas began to develop in the skin below the right knee, and soon afterward similar areas appeared around both elbows. These have slowly enlarged and new ones appeared over the extensor surfaces of the tibiae and one over the right buttock. There has been a sustained temperature varying from 99.6 to 102 F. There was no history of ingestion of drugs.

There are swollen hot tender purplish red areas on the extensor surfaces of both forearms and some superficial violaceous areas on the dorsa of the hands and the anterior surface of the legs.

Histologic sections are shown.

DISCUSSION

DR PAUL A. O'LEARY, Rochester. The diagnosis of chronic nonsuppurative panniculitis seems warranted. The process is apparently of a mild type although the lesions are numerous.

LOS ANGELES DERMATOLOGICAL SOCIETY

KENDAL FROST, M.D., *Chairman*

Dec 13, 1938

CHARLES R. CASKEY, M.D., *Secretary*

A Case for Diagnosis (Iododerma Due to Iodized Salt?) Presented by DR H. C. L. LINDSAY

R. H. M., a white man aged 65, a pharmacist, has an eruption located principally on the legs, which began about two months ago. It consists of multiple shallow ulcers covered with brownish crusts. Each lesion is surrounded by a purplish

red inflammatory areola, some of them are discrete papules with crateriform centers. Old lesions which have healed have left scars. There is no history of ingestion of drugs other than the use of iodized salt. A physical examination showed no abnormality except numerous decayed teeth. A blood count showed 59 per cent hemoglobin and 4,000,000 red cells. The white blood cell count was normal. A urinalysis showed albumin and occult blood. The stool also revealed occult blood. The Wassermann reaction was negative.

DISCUSSION

DR L F X WILHELM I think the whole picture might be explained on the basis of iododerma. I saw little resemblance to molluscum contagiosum or tuberculid.



Fig 1—Iododerma from iodized salt

DR SAMUEL AYRES JR I think that a diagnosis of molluscum contagiosum should be considered. However, I think that tuberculid is more likely. I have seen atypical molluscum with considerable inflammatory reaction. I understood the patient to say that he picks out the lesions and they heal. Of course, a histologic examination would solve the problem.

DR H S CAMPBELL I subscribe to the diagnosis of iododerma. I do not think the picture looks anything like molluscum contagiosum and do not believe it could justifiably be confused with it, even when secondarily infected.

DR WILLIAM H GOECKERMAN Clinically, I think it could be iododerma. I cannot say much for tuberculid. There is a decided inflammatory halo around each lesion. I believe molluscum contagiosum should be considered. I made a

brief search for lesions of molluscum but could find none. Cases of iododerma should be studied in detail, such measures as examination of the urine for iodides being included.

DR H C L LINDSAY. From the point of view of Dr Ayres, one of the lesions looks much like molluscum contagiosum. It is a pearly papule with a definite center, but the other lesions look more like bromide granulomas. According to the history the man has taken no bromides as medicine, but he has been taking iodized salt continuously with his meals for several years. The lesions are inflammatory, and the general appearance coincides with that of a halogen rash, but in this instance with more of a bromide than an iodide configuration.

NOTE—Chemical examination of both the urine and the feces for iodine gave negative results. The histologic observations were inconsistent with the picture of molluscum contagiosum.

Granuloma Coccidioidale (Four Cases) Presented by DR HARRY P JACOBSON

CASE 1—S L, a white American man aged 38, is a mechanic engaged in airplane construction. On April 2, 1934, he struck his left shin on a piece of steel. A hematoma formed at the site of the injury. On April 9 he wrenched his left shoulder, and three days later a swelling appeared over the left sternoclavicular joint. Incision over this swelling revealed no pus. He continued work until April 27. On May 22 he was admitted to the dermatologic service of the Los Angeles County Hospital. At this time there were abscesses at the site of each of the aforementioned injuries. From each a small amount of pus was draining through a small sinus. This pus contained typical double-countoured endospore-forming organisms. Roentgenograms showed considerable destruction of both clavicles and the left shoulder and pleuropulmonary coccidioid granuloma. *Coccidioides immitis* was obtained from both abscesses.

His treatment at that time was with large doses of iodides, colloidal copper intramuscularly, coccidioidin subcutaneously and cod liver oil. The fistulas were dressed daily with cupric sulfate solution. In November 1934 he was discharged to the outpatient clinic. In April 1935 an autogenous vaccine was prepared. This was given intravenously and all other medication discontinued. Under this plan progress was rapid. This patient has had no treatment since Feb 8, 1938, and the disease seems completely arrested.

CASE 2—E G, a white man aged 19, was admitted to the Los Angeles County Hospital in the fall of 1936 on account of a peritonsillar abscess from which drained considerable pus. The abscess was traceable to lymph nodes in the anterior triangle of the neck, which in turn drained through a cutaneous lesion in that region. Improvement was so rapid under treatment with coccidioides vaccine that he left the hospital and disappeared for three months. In the middle of March 1937 he returned, with extensive involvement of the left sternoclavicular region and all the soft tissues and overlying skin. From the abscess typical *C. immitis* was recovered on culture. He has been treated with coccidioides vaccine and cod liver oil. He has had no treatment since May 11, 1938, and the condition appears clinically to be completely arrested.

CASE 3—A H, a white American man aged 44, a miner, gave a history of an injury to the back followed by an abscess in the bruised area two weeks afterward. *C. immitis* was found in the pus from the incised abscess. He was in the Los Angeles County Hospital from June 2 to Aug 15, 1936, after which he disappeared from observation. Treatment consisted of rest in bed, administration of cod liver oil and colloidal copper and intramuscular and subcutaneous injections of coccidioides vaccine. He also had treatment for cerebrospinal syphilis. In

September 1936 he was readmitted to the hospital, with extensive involvement of the right inguinal region. Roentgenograms showed no involvement of the lumbar vertebrae. For the past three months he has been given antisyphilitic treatment. The only treatment he has received for the coccidioidal condition has been intravenous injections of coccidioides vaccine. Those who saw this patient at the meeting of this society on April 12, 1938, can appreciate the improvement. Figure 3 shows a healing process.

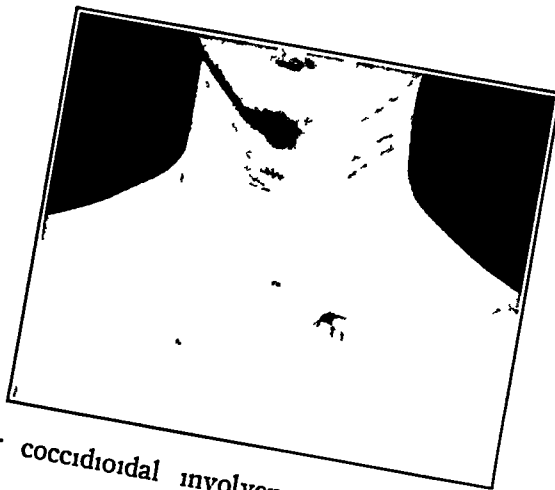


Fig 2—Clavicular coccidioidal involvement, with soft tissue ulceration and healing



Fig 3—Inguinal coccidioidal ulceration in the process of healing

CASE 4—J O, a white American man aged 61, a barber, gave a history of pain in the right hip for two years. In January 1937 he was admitted to the hospital with a retropharyngeal abscess, from which *C. immitis* was recovered. He was given several transfusions immediately after admission to the hospital for severe secondary anemia. Roentgenograms of the chest revealed an old bilateral apical involvement suggestive of tuberculosis. Roentgenograms of the right extremity and vertebrae revealed rarefaction of the fourth and fifth cervical vertebrae and apparent rarefaction of the sacrum at its right ala and the sacroiliac

joint Comparative study in October 1937 showed no active pathologic changes. Treatment consisted of injections of coccidioides vaccine, subcutaneously at first, then intravenously, complete rest, and administration of halibut liver oil. He has received no treatment since June 9, 1938, and has since returned to full time work.

DISCUSSION

DR H S CAMPBELL These reactions are so spectacular that they savor of an advance in the therapy of a decidedly resistant and in large measure hopeless condition, in which therapeutic claims often indulged in are invariably found wanting. I should like to know whether these cases are the cream of the group or whether they are representative of what is occurring in the whole group. The disease definitely tends to fluctuate in the deeper systemic type, which these cases represent. As I say, if this represents what is occurring in them all, in direct response to this intravenous therapy, then I think Dr Jacobson has struck an advance note in the therapy of this disease. What reaction is obtained from the vaccine?

DR H C L LINDSAY I believe that Dr Jacobson should be highly commended for his tenacious efforts in curing some of these patients. I should like to ask how the appearance of a scar of coccidioidal granuloma would differ from a scar of tuberculosis cutis or syphilis.

DR L F X WILHELM Along the lines of Dr Campbell's first statement, I should like to suggest that Dr Jacobson present these patients at six month intervals so all the members can satisfy themselves as to the permanence of the cure obtained.

DR HARRY P JACOBSON These 4 cases of coccidioidal granuloma were picked at random to illustrate the results of treatment of the disease with vaccine intravenously. To date I have a series of 20 odd cases in which this method has been used, with results similar to those shown in these 4. In the past three years or thereabouts I have lost only 1 patient with coccidioidal granuloma, one with extensive meningeal involvement. I have experienced no difficulty with my ambulatory patients, who receive the injections of vaccine in the office, they are instructed to go home immediately and lie down for the duration of the chill. The focal reactions are fairly severe, affecting alike the systemic and the cutaneous lesions.

I am greatly impressed by the results of this form of therapy. The method is applicable not only to coccidioidal infections but to some of the other systemic mycoses. In 1 case of actinomycosis with extensive involvement of the liver and lungs, in which there had been no response to treatment with iodine, thymol or roentgen rays, the response to intravenous vaccine therapy was most satisfactory. The vaccine should preferably be autogenous, but when that is not possible, a polyvalent vaccine including a great many strains is advantageous.

Jan 10, 1939

Carcinoma en Cuirasse Presented by DR SAUL S ROBINSON

J M, a white woman aged 67, had a radical mastectomy in 1935 for adenocarcinoma. In 1935 and 1936 she had twenty-six roentgen treatments over the area. In March 1938 the left breast was removed for metastatic carcinoma. Soon after this nodules and thickened red skin appeared over the right side of the thorax and right arm. This involvement of the skin has progressed, until now there are induration, nodules and ulcerations on the right side of the thorax and on the right arm and forearm. The patient was presented before this society on

Nov 9, 1937, by Dr C R Halloran (ARCH DERMAT & SYPH 37 1061 [June] 1938) and is presented at this time to show further extension of the disease

DISCUSSION

DR SAMUEL AYRES JR This condition looks like that in a case I presented about one year ago and, I think, belongs in the group of carcinoma erysipeloides following removal of mammary cancer, with recurrence in the other breast and apparent lymphatic spreading of cancer cells This acute process coming on in the past few months is an inflammatory process in the lymph spaces The prognosis is altogether bad

DR WILLIAM H GOECKERMAN I should like to emphasize that in this type of carcinoma the erysipeloid character of the lesion is the result of infiltration of the lymphatic vessels by carcinoma cells rather than actual infection

DR SAUL S ROBINSON The principal reason for presenting this patient was the extensive involvement of the right arm and forearm In most of the cases reported the lesion has been on the thorax This patient's condition has been progressing rapidly, with dissemination of the carcinomatous tissues

A Case for Diagnosis (Herpes?) Presented by DR ANKER K JENSEN (by invitation)

R F, a white American laborer aged 32, has a lesion on the side of the neck, which followed a cut by a razor three years ago There has been a slight amount of spreading since that time At no time has the lesion completely healed There has been no similar lesion elsewhere on the body There are few subjective symptoms The lesion on the right side of his neck is about the size of a dollar The skin over this area is atrophic and presents a shiny appearance Under this thin atrophic layer there is a small amount of serous exudate The borders are well outlined The man is in good health and has an excellent blood count Examinations of the urine and the blood showed no abnormalities The treatment has consisted of six $\frac{1}{4}$ skin unit doses of roentgen rays and applications of different ointments and paints He has had four injections of smallpox vaccine and eight injections of snake venom No improvement was noted from any of these

DISCUSSION

DR NELSON PAUL ANDERSON Dr Ayres and I have under observation a group of cases to which I believe Dr Jensen's case belongs We have observed some 4 or 5 cases of a herpetiform eruption, which this condition undoubtedly is, appearing especially about the neck In some there are lesions about the groins The condition is extremely resistant to therapy and does not seem to respond to roentgen irradiation It spreads by peripheral extension a great deal as impetigo does, with undermining of the edges This lesion is larger than any single one that we have seen We have more or less tentatively called the condition "recurrent herpetiform dermatitis repens" In several cases the possibility of a drug as an etiologic factor has been suggested When this possibility has been traced there has been nothing to it The histologic slide was not characteristic of any dermatosis, and yet I believe the condition to be a definite clinical entity I am wondering if any of the other members have seen anything like it

DR H S CAMPBELL In view of the persistence, why does Dr Anderson use the term recurrent herpetiform eruption? The differentiation between the entity in question and simple herpes, one would say, lies mainly in the length of time over which the lesion persists

DR WILLIAM H GOECKERMAN If Drs Anderson and Ayres have discovered a new entity I am glad to know of it I have never seen anything that reminds me of this condition, and I feel that it is a dermatitis artefacta, largely because I cannot place it in any category with definite characteristics In herpes sometimes the bullae become large as the result of confluence of the vesicles

DR SAMUEL AYRES JR When I first saw this patient that diagnosis came to my mind I think it belongs in the group that Dr Anderson has described This case is the fifth or sixth that he and I have observed Characteristic of these cases, as Dr Anderson has mentioned, is the fact that most of the lesions are about the neck, with a few in the groin The lesions are herpeticiform but not typical of herpes simplex They present herpeticiform vesicles but spread like dermatitis repens with moist borders They are rebellious to treatment Some of the patients respond to roentgen therapy and remain well for months, with recurrence in the same place or some neighboring area We have 2 cases at present, those of a mother aged 70 and a daughter aged 45 I have been puzzled as to how to classify the entity, and the name we thought of suggests the herpeticiform appearance combined with the spreading habit of dermatitis repens I should be much interested in knowing if any one else has seen a condition like this

DR H S CAMPBELL My feeling is that this lesion is an artefact, because within the affected part over its central area there are three small areas of definite scar tissue On the other hand, some time ago I had a patient with a condition similar in certain respects to the one which is being described tonight as a new entity It was on the right side of the gluteal area, when presented, the lesion was three days old Although herpeticiform, the central zone was devoid of vesicles, being simply reddened It extended marginally by a narrow band of undermined skin and was resistant to therapy I remember being somewhat puzzled by it, and I concluded it might be somewhat resistant and atypical recurrent herpes

DR S W BECKER, Chicago (by invitation) I have never seen an eruption just like this one Of three areas of activity, at least one showed typical herpeticiform vesicles The plaque contained no hair, and the skin was atrophic, which would be difficult to explain on the basis of herpes simplex I could get no history of injury, which would suggest neuritic dermatitis, as described by me and later by Dr Ruth Herrick, from the clinic with which I am associated The patient did state that he had a painful sensation on the inside of the neck on that side, so that the lesion may be neuritic The alopecia and atrophy may be the result of treatment I should suggest inoculation of a rabbit's cornea with serum from the vesicles, a procedure which in practically all cases of herpes simplex is followed by encephalitis

DR PAUL D FOSTER Herpes simplex recurrens has varying periods of latency It seems possible that the attacks could occur in such close proximity as to appear as one, thereby confusing the picture The scarring and alopecia present strongly suggest herpes to me I should suggest vaccination with smallpox vaccine, according to the technic of Abshier and me (*ARCH DERMAT & SYPH* 36 294 [Aug] 1937)

DR NELSON PAUL ANDERSON The condition has always looked as it does tonight What Dr Goeckerman brought out was what I have thought a number of times The man has not worked for three years because of this lesion on his neck I told him he was able to go to work, but he was not pleased The next time I saw him it was at the clinic of White Memorial Hospital When I see him again I shall put on an occlusion dressing and see if it makes any change

Pityriasis Rosea (of Eight Months' Duration) Presented by DR NELSON PAUL ANDERSON

E R, a white American woman aged 23, has an eruption which began eight months ago as a pink scaly area on the left breast About two months ago a similar area appeared on the left hip In the past six weeks about a dozen new lesions have appeared on the trunk At this time the "mother spot" appears as a relatively large plaque with an erythematous annular oozing eruption larger than a dollar on the left breast

DISCUSSION

DR L F X WILHELM I think the condition is pityriasis rosea It is unusual for the herald patch to be present six or eight months before the rest of the eruption appears

DR WILLIAM H GOECKERMAN I cannot agree with the diagnosis of pityriasis rosea without further study There is the possibility of beginning mycosis fungoides

DR SAMUEL AYRES JR I think that the extremely long duration of the initial patch and the present rather moist appearance would make one consider mycosis fungoides The whole picture is certainly unusual for pityriasis rosea

DR M NORRIS ROSENBERG With the oozing it may be beginning Paget's disease

DR CHARLES R CASKEY I cannot agree with the diagnosis as presented My interpretation is that the lesion on the breast is of fungous origin (possibly monilial) and that the other lesions are ids

DR H S CAMPBELL I cannot accept this case as one of pityriasis rosea, either clinically or historically, as now, after ten weeks, new lesions of doubtful character are still appearing The oozing and inflammation over the areola of the breast, where the early lesion was situated, are due to local medication My impression is that the condition may be either parapsoriasis or commencing mycosis

DR NELSON PAUL ANDERSON The main point in presenting the patient was to show that this disease, among all the acute inflammatory dermatoses, presents the most varied picture There are hemorrhagic types and papular and macular types I think that with the large macular type of pityriasis rosea one sees the most variations and the lesions persist the longest The textbooks state that the duration of the disease is six or eight weeks if no treatment is given I think some of these large macular types will last six or eight months or even a year if no treatment is given, and sometimes their persistency in spite of treatment is astounding

Neurofibroma (?) Associated with Dermatosi Papulosa Nigra. Presented by DR MAX J WOLFF

C G, a Negro aged 39, has lesions which have appeared gradually for about twelve years A few have "come to a head," and the patient was able to express a "core" At this time he presents numerous discrete soft dome-shaped nodules varying in size from that of a pea to that of a cherry, some of which invaginate on pressure Most of them are of the same color as the surrounding skin, and a few are darker Most of the lesions are about the lower part of the trunk, but a few are present about the infrascapular region There is one large movable almond-shaped subcutaneous nodule on the extensor surface of the left arm, above the elbow Scattered over the face are flat-topped black papules varying in size from that of a pinhead to that of a match head

DISCUSSION

DR M NORRIS ROSENBERG I got the impression from the lesions and the associated pigmentation, with the associated low intelligence quotient, that the patient has Recklinghausen's disease

DR S W BECKER, Chicago (by invitation) My first impression was that the eruption was multiple steatocystoma, described by O S Ormsby and C W Finnerud in the ARCHIVES (22:822 [Nov.] 1930) The lesions are in the seborrheic areas, a distribution I have never seen for Recklinghausen's multiple neurofibromatosis The section showed only normal connective tissue, not the glia-like tissue of neurofibroma I should suggest that a histologic specimen be bisected, so that the center of the tumor will be sectioned

DR MAX J WOLFF There is a section under the microscope It is not suggestive of neurofibroma

Book Reviews

Syphilis and Yaws in Guatemala Chapter 10 of a Medical Survey of the Republic of Guatemala By George Cheever Shattuck, Assistant Professor of Tropical Medicine, Harvard School of Public Health, with the collaboration of J C Bequaert, M M Hinferty, J H Sandground and S D Clark Price, \$2 50 Publication 499, Carnegie Institution of Washington, 1938

The chapter under consideration deals with the incidence of syphilis and yaws in the natives of Guatemala The population consists mainly of two races—the pure-blooded and nearly pure-blooded descendants of the aboriginal Indian tribes and the Spanish-Indian crossbred or mixed races, called Latins Based on clinical and serologic investigations, the author (in collaboration with Dr Helen Curth) found that the incidence of syphilis is nearly twice among the Latins what it is among the Indians The proportion of complete clinical latency is high in both races but higher in the Indians In the latter there is conspicuous scarcity of clinical evidence of syphilis, pointing toward probable immunologic peculiarities inherent in aborigines

In Guatemala City the survey indicated a high percentage of syphilis Neurologic lesions are not rare Among the native Indian races a survey made by Dr Estevez showed only 1 per cent of infections In the highlands of Guatemala the incidence of syphilis fluctuates between 27 and 10 per cent among the Latins and the Maya Indians The disease runs a mild course, indicating that the natives possess an unusual degree of inherent racial or acquired and inherited resistance toward the infection

Yaws is so rare in Guatemala that newly discovered cases are regarded almost as clinical curiosities Incidentally, Dr Shattuck has had a broad experience with yaws in the Philippine Islands, Brazil and Africa, so that the much discussed problem of differential diagnosis did not play a role in the compilation of the data here presented

The author comments on the incidence and clinical course of syphilis in various countries and among different races of the world Over a dozen well constructed and easily read tables form a supplement to the chapter

The monograph has a cardboard binding and is printed in large type on heavy paper In addition to chapter 10, nearly all the contents of the monograph are of great interest to dermatologists and syphilologists

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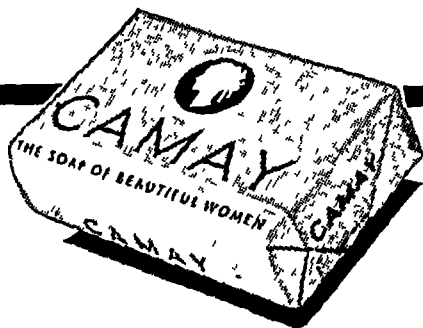
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